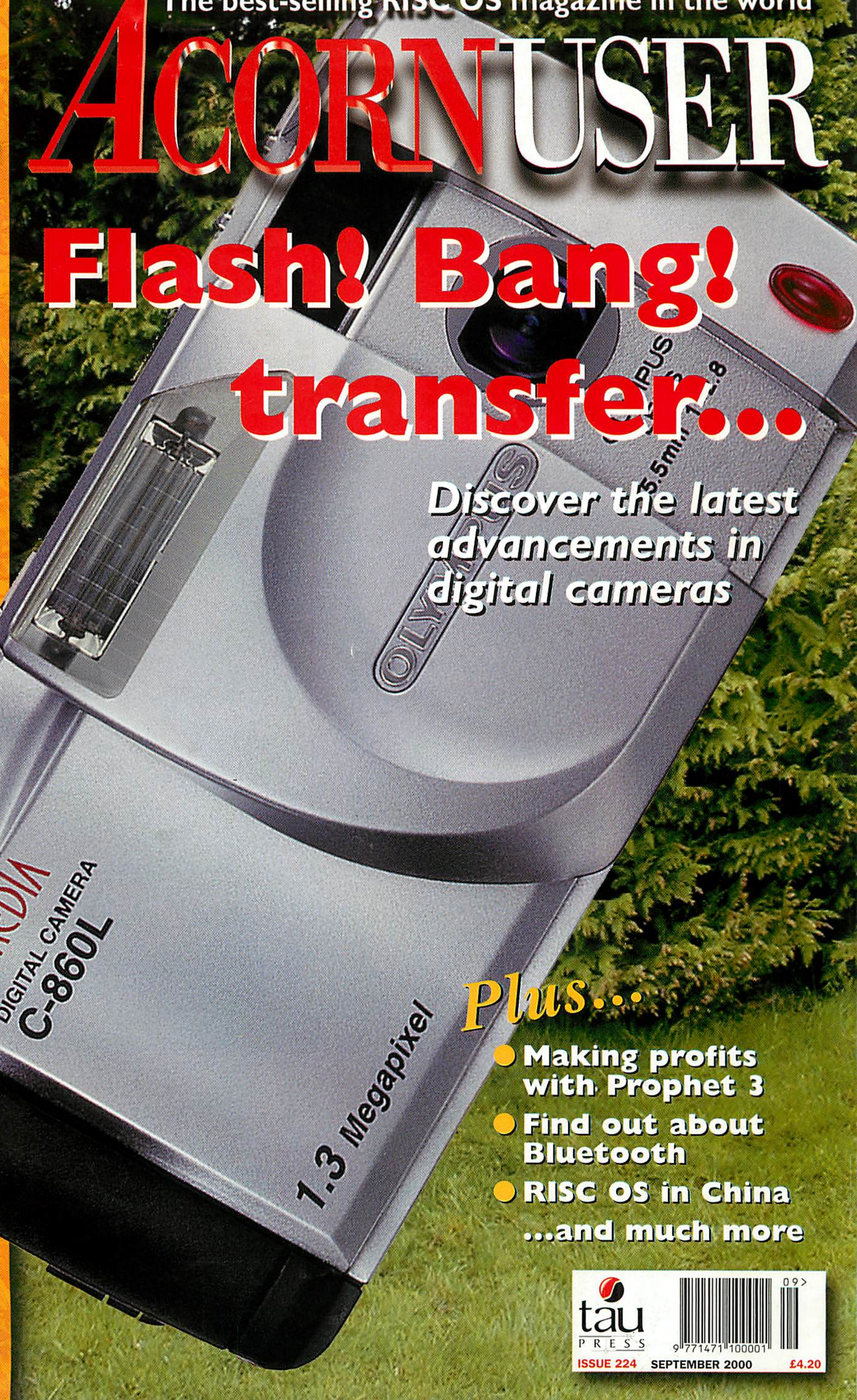
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Are you a renaissance person?

By that I mean, are you well-rounded? Are you just as interested in science as the arts? Can you solve differential equations while balancing a broom on your finger and painting a landscape in the impressionist style?

Neither can I. But I try to stay abreast of what's happening in the world of science – and I don't watch *Tomorrow's World* for that, heaven forbid – while appreciating the beauty of art and Harry Potter.

The dedicated scientist and the dedicated artist are not well-rounded, but the greatest men in history – Leonardo da Vinci, Isaac Newton and so on – are such people.

Politicians aren't, and unfortunately they seldom know more than how to play at political chess reasonably successfully since we've heard of them. It's easy to despair of politicians, they can seem completely clueless on all manner of subjects and they are – which is why they have experts to advise them.

Unfortunately there is a fundamental dilemma here: If they know nothing about the subject how on earth can they be expected to determine whether some self-proclaimed expert really is one? And how can they tell if this expert has a hidden agenda?

They can't.

We may blame Tony Blair for having a government policy that encourages the installation of PCs in schools despite the obvious running costs. But he only does what his advisers tell him, and he doesn't know any better. How could he?

He *ought* to know better but he's a politician, not a Renaissance man. He can only do as he is told and he has no ability to judge the value of what he is told so follows it blindly: It's simple logic, the adviser was appointed because the adviser knows, therefore the adviser is right, so following the advice given must be right and anyone who says otherwise is just crazy.

We're not crazy, but we are rebels – and if there's one thing that Governments hate more than crazy people, it's rebels. Which is why we run into a brick wall however taking down a brick wall, even a Government one, is possible it just takes a bit of effort.

Steve Turnbull

October issue on sale 31st August 2000

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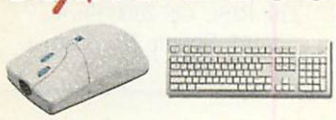
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RISC OS 2000 booking fast

As revealed in the last issue plans for the RISC OS 2000 show are proceeding well and this month we can reveal even more details of who is appearing at the popular new venue, the Queen's Stand, Epsom Racecourse.

Organisers, The ARM Club, with help from Surrey and Sussex Acorn User Group (SASAUG) and RISCOS User Group of London (ROUGOL), are continuing to build on the tremendous success of the last year's show.

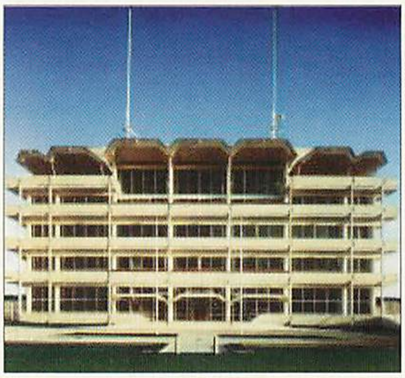
By the beginning of August, over twenty exhibitors had agreed to make this show the most important in their calendar.

Companies expected at the show include:

Castle
RiscStation
Spacetech
CTA Direct
RComp
RISCOS Ltd
Cumana/Cannon Computing
Icon Technology
Softease
Acorn User
APDL
Archive
Warm Silence Software
Jonathan Duddington
Surftec
EFF
CJE Micros
iSV Products
Cerilica

The RiscStation small exhibitor village is absolutely packed out with the premier compact and bijou businesses in the RISC OS world. Other sponsors of the show are Spacetech and *Acorn User*.

Even more excitingly several of the palmtop community plan to exhibit, including Palmtop magazine and leading Psion and other dealers supporting the growing number of RISC OS/Acorn users with such equipment. The planned



implementation of RISC OS 4 on the StrongARM-powered Psion series 7 adds to the relevance of the show for Psion dealers.

The location of Epsom close to the M25 makes it readily accessible and within two hours of the Channel Tunnel, helping RISC OS users from the Continent to visit the show. Last year a strong representation of Dutch and German user groups was in evidence. Adequate car parking is available.

The show will run from 10:00am to 5:00pm on Saturday and 10:00am to 4:00pm on Sunday. Shuttle buses will run to and from the main Epsom station.

Ticket prices will be £4 in advance, £5 on the door and are valid for both days. For advance tickets write to RISC OS 2000, Merton Court, 38 Knoll Road, Sidcup, Kent, DA14 4QU.

ARM Club, SASAUG and ROUGOL members can attend free of charge on Sunday.

For more show information visit the ARM Club web site on **www.armclub.org.uk/shows/riscos** Put these dates in your diary, October 21 and 22. The RISC OS 2000 Show, Queen's Stand, Epsom Racecourse.

Einstein got it wrong?

At the recent Congress 2000 – dedicated to new ideas in natural science and engineering – held in St Petersburg at the beginning of July, former Maths teacher and RISC OS user, Bruce Harvey, presented a paper demonstrating that the classical laws of Physics alone can predict all the effects that Einstein's relativity claims to show.

Said Bruce: "My advantage is that I am retired. I do not have a career to worry about. If a professional physicist expressed doubts about Einstein, they would soon be ostracized and lose their job. Einstein explained everything in terms of four dimensional space-time – but you don't need to do that. I can show that time is Newtonian – the only moment that exists is Now. The past is just memories and historical records. The idea that time is a dimension and that we can travel in it makes great science fiction, but very poor Physics."

About RISC OS Bruce says: "I dream about owning one of the new Millipede machines when they come out."

Internet regulation fiasco

A special report by Lee Wade

Another forest burned last week courtesy of the UK Government's failure to understand or properly consult the Internet/telecoms sector concerning serious issues of security, privacy and commerce for all UK Internet users before pushing forward with the existing draft of the RIP (Regulation of Investigatory Powers) Bill. This bill is currently at committee stage in the House of Lords and is scheduled with immovable Government determination to become law in October.

This bill affects the statutory rights of all of us. This section summarises the RIP Bill, the issues and the reasons for last week's contentious debate in the press. However, for those that would like to read this Bill in its entirety first, go to: **www.parliament.the-stationery-office.co.uk/pa/cm199900/cmbills/106/2000106.htm**

This Government's rush continually proves to all that we are the world's number one 'nanny' state. The mainstream Press treated us to as many column inches waxing lyrical over the RIP Bill – currently moving like a behemoth through the House of Lords Committee stage on course for legislation in October – as it did on the post-mortem regarding the England football team's exit from the Euro 2000 finals.

This media-fest concerning the RIP Bill will not have escaped many people's attention last week given the radio, TV and newspaper coverage it received, even if it was just a cursory thought towards its idiotically, self-proclaiming acronym – RIP – as in arrogantly RIPping off the UK general public again without fully considering or understanding the potential fall-out, costs and damage to business and civil liberties this proposed legislation will wreak.

This Government continues to reveal itself with such deliberate arrogance, indifference and appalling ineptitude. Is it any wonder that Tony B keeps getting handbagged? If he doesn't root out the fools that continue to mis-advise him on such complex issues, the cumulative effect of the electorate's sufferance will see him in opposition faster than he may have anticipated.

So, why is RIP so contentious? Some background:

Real world [existing] legal precedents and laws are often not applicable to Internet usage and new laws such as the RIP Bill aims to protect society but as usual, reduces our privacy.

The fact is we need the Internet to become the requisite 'good citizen' we require in terms of privacy and security to inspire the trust we need to use it more for everyday transactions. The problem is Government intervention is often necessary, but it inevitably curtails freedom and privacy. How long before the Internet is taxed – a very simple and profitable tax to collect?

Naturally the Government needs to be concerned about the Internet's potential for crime, including paedophilia, money laundering, drug-dealing, consumer fraud, spying and so on. But there is a balance between security issues on the one hand and privacy, commerce and individual freedom on the other. And this Government has got that balance so woefully wrong with the RIP Bill, that it is in real danger of wrecking its laudable target policy of making the UK one of the most advanced Internet/technology nations in the world.

So what are the main tenets and issues of the RIP Bill?

- RIP provides the Government with the legislative framework and instrument to undertake the mass covert surveillance of individuals' and corporations' Internet usage and communications. ISPs will have a direct line installed (probably to GCHQ and/or the Government's new data surveillance centre) which will allow, if required by Government agencies, full monitoring of your Internet communications and handover of any encryption keys. Your privacy will no longer be guaranteed.
- There exist potential breaches and contraventions of other laws such as the Data Protection Act, Employment and Company Law and the European Convention on Human Rights.
- There are many unresolved questions concerning civil liability for handing over encryption keys of individuals and companies that later prove to be innocent of any wrong-doing.
- Little regard is paid to the cost of implementing the Government's physical connection to ISPs and ongoing manpower costs of complying with the law. The Government suggests this will cost the ISPs £20 million per year, while the LSE report commissioned by the British Chamber of Commerce suggests this figure to be £640 million over five years.
- The damage to the UK economy is estimated to be as much as £46 billion in lost business driven abroad.
- The Government is absolutely determined to make this law by October 2000 – possibly before the imminent European Human Rights Act which would allow this bill to be challenged.

There are far too many issues with the RIP Bill to go into detail here, but the LSE report succinctly summarises some of them below. The full report entitled "The Economic Impact of the Regulation of Investigatory Powers Bill" commissioned by the British Chamber of Commerce and written by the London School of Economics Team, is available from **www.britishchambers.org.uk**

Report summary

General issues:

1. There exists a clear need for a rigorous framework for the regulation of law enforcement access to communications media, including the Internet. Placing such regulation within the framework of the European Convention on Human Rights is a welcome and necessary objective. Business requires confidence that efficient and effective policing of criminal activities is regulated by clear and well reasoned legislation.

2. The RIP Bill as it stands is entirely inadequate as a mechanism to achieve efficient and reasonable interception and surveillance. Its effect is likely to be loss of confidence in e-commerce, unacceptable costs to business and to the UK economy, confusion and uncertainty at numerous levels of business activity, and an onerous imposition on the rights of individuals.

3. The justification for the Bill has been established to a large extent on anecdote and rhetoric. Whilst attempting to achieve a long term infrastructure for interception and surveillance, the government has failed to produce a threat model to form the foundation for a rational assessment of the need for many of the provisions of RIP.

4. The effect of the Part I provisions of the Bill can justifiably be described as mass surveillance of Internet activities without judicial warrant or adequate oversight. The bill substantially increases the power of public authorities without correspondingly increasing the scope for oversight and accountability.

Business and economic implications:

5. The construction of the definitions used in the Bill tends to be excessively broad, leading to substantial doubt as to the level of exposure to cost, risk and disruption for business. Of even greater concern, are the implications that arise as various agencies explore how this new framework might be 'stretched' in the future. These imponderables cast uncertainty over future investment decisions.

6. The Bill will create significant economic repercussions. It imperils the Government's intention of making Britain the most desirable place to trade electronically. As it stands, RIP is likely to create a legal environment which will inhibit investment, impede the evolution of e-commerce, impose direct and indirect costs on business and the consumer, diminish overall trust in e-commerce, disrupt business-to-business relationships, place UK companies at a competitive disadvantage, and create a range of legal uncertainties which will place a growing number of businesses in a precarious position.

7. There is compelling evidence that the enactment of RIP will create a trend amongst UK firms to establish a range of operations offshore, while creating an environment hostile to the creation of, and investment in, new business activities in the UK.

8. The government has substantially underestimated the cost of compliance by ISPs. The most realistic estimate is of the order of £640 million over the next five years.

9. The overall financial implication of RIP, in terms both of losses and leakage from the UK economy and of cost of implementation may be in the order of £46 billion in the first five years of operation.

10. The Bill will impose Government mandated design and technical requirements for communications systems which will have the effect of freezing technological advancement, thereby discouraging industry from investing in otherwise promising products and services. Government mandated design and technical requirements would make consumers and industry dependent upon the Government to revise the requirements frequently enough to keep up with technological changes.

11. The practical operation of section 46 presents a real threat to the security of corporate signature keys, and must be regarded as a major impediment to the establishment of public confidence in electronic commerce in the United Kingdom.

Legal issues:

12. There are substantial grounds for the view that the Bill contravenes and compromises a number of legal rights and responsibilities. On the balance of legal opinion, Part III contravenes the European Convention on Human Rights. Elements of Part I may breach the Data Protection Act, while the execution of the Bill's provisions in both Parts I and III are likely to compromise a range of conditions relating to duty of care.

13. The practical implications of RIP will depend to a great extent on the provisions in secondary legislation, and the scope of the anticipated Code of Practice. The fact that the Government has failed to provide details of either has placed UK business at a great disadvantage in assessing the legislation.

14. The Bill poses a number of unresolved questions about the position of the legislation with regard to both employment and Company Law. Amongst the most prominent of these is a potential issue of the Government being deemed to be acting as a 'shadow director'. This raises a number of obvious questions with regard to the potential civil liability of the company if the surrendered keys were used in such a way that an innocent third party suffered loss.

15. It is unclear where the boundary is drawn between 'content' of messages or transactions, (where warranted access is required) and 'communications data' (where access would not appear to require a warrant). The amendments tabled by Lord Bassam to Clause 2 and Clause 20 make this concern even greater.

16. The Bill is unclear about which officials, at what level, in which departments may seek access to encryption key material and communications data. Of greater importance is the lack of clarity in the bill on the question of warrant procedure and

In brief

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The RISC OS printing system does not yet have the ability to handle this type of printer.

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Paul Vigay has announced that he has registered with UKShareReg to provide online ordering via a secure server for his popular AntUtils application.

This will enable overseas users to pay via credit card and avoid paying bank charges. However Paul asks that those registering in the UK should preferably send a cheque to avoid the credit card commission charges.

To order, visit the usual AntUtils page at www.vigay.com/riscos/apps/antutils.html and click on the registration logo.

Risc OZ moves

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Australia

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validation.

17. There is considerable concern in the business community on the degree of individual and corporate liability flowing from exposure in other jurisdictions to actions potentially required in the UK to comply with the RIP Bill. If full decryption (as opposed to the generally preferred option of session) keys are demanded using a Section 46 notice with an associated 'tipping-off' order, individuals working for multi-national companies may be placed in a perilous position. They may have compromised the international transactional security of that organisation yet be directly barred from informing senior management of that exposure. Such an individual may possibly be protected under UK law for these actions but their exposure in other jurisdictions – particularly that of a non-UK parent company is uncertain.

Other key issues:

18. Both Part I and Part III of the Bill raise important questions both for the functioning of media and for the status of legal professional privilege.

19. The Part III issue of the reverse burden of proof regarding lost or missing keys carries with it important considerations for civil rights. These provisions also have important repercussions for business for the management and retention of revoked keys.

20. An international survey of laws indicates that the provisions of RIP have been rejected in numerous jurisdictions. The closest parallel is the Russian SORM scheme, which pre-dates RIP, and which appears to have a common genesis.

21. There exist a number of technical means of overcoming the intentions of the legislation. The use of these mechanisms, which include new forms of encryption and anonymising services, will circumvent the provisions of the legislation. The pursuit of solutions will have the effect of driving up costs of compliance and creating more onerous impositions on individual rights.

We wholly endorse the BCC/LSE report and its findings, and its recommendations for greater industry participation and consultancy. We further recommend that the Government abandons the October deadline for the RIP Bill to become statutory and instead moves forward by consensus with the setting up of a public and industry forum. This could be jointly co-ordinated by representatives of the Internet Service Providers Association, the British Chamber of Commerce and the DTI. Such a forum could address all the issues raised with a view to a spring 2001 statute book deadline.

Stop press

Since this article was first written, the Government has conceded somewhat on some issues in Part III of the RIP Bill. The update set out below is a copy of the information provided by ISPA (Internet Service Providers Association).

Amendments: The Government published their amendments to Part III of the Bill, which illustrate that they have bowed to the weight of argument. ISPA welcomes the amendment meaning that individuals who forget their passwords will no longer have to prove their innocence but instead the prosecution will need to prove their case.

Secondly, it has been made clear that requests for keys or decrypted material from companies will now only be served on senior management. However, the provisions that damage the world-wide perception of the UK as a suitable environment to do e-commerce still remain. No amendments have been proposed to remove the Government's powers to demand that encryption keys are handed over.

ISPA does not believe that the structural changes proposed by the Government will persuade the security professionals of international "dotcom" companies that the UK is a safe place to bring their keys. ISPA will provide a report of the final day of Committee which took place this afternoon (28 June).

*Lee Wade is a Director of the Internet service provider CIX (**www.cix.co.uk**)*

StrongARM goes turbo

The APDL Turbo processor upgrade is a part-exchange processor for any StrongARM Risc PC. It has a boosted clock rate and other additions to increase speed.

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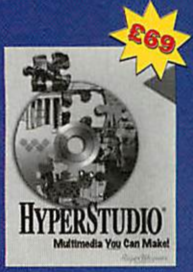
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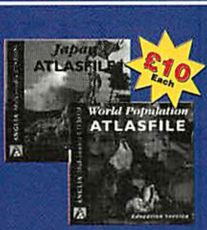
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In the air tonight

Alan Forsyth on the future of wireless networks

Press releases from computer giants Intel, Microsoft, IBM and Psion to name a few have been buzzing with statements about investment in Bluetooth technology. What is Bluetooth I hear you cry? Is it a new variety of ocean life? Time to don snorkel and dive in to find out what causing this financial feeding frenzy among the sharks.

Bluetooth is a short-range radio technology, which enables networked devices such as handheld computers, mobile phones and PCs to connect to each other – and to the Internet – wirelessly. American-based companies Intel and WIDCOMM are generally regarded as the forerunners in this technology being among the first to develop reliable and inter-operable software needed in any Bluetooth-enabled device: a Bluetooth protocol stack.

Bluetooth's technological goal is to allow people with PCs, cellular phones, PDAs and laptops to link their devices and to access the Internet wirelessly, securely and inexpensively. It is a simple, low cost, low power, short-range radio communication technology currently supported by over 1,400 companies.

The technology allows electronic devices such as PCs, printers, handheld computers, mobile phones and headsets to communicate wirelessly without line-of-sight, removing the need for platefuls of "cable spaghetti". Bluetooth also enables wireless access points to a fixed network, ease of data transfer, and synchronisation of data between devices for instance from a handheld computer to PC.

The system is based on spread-spectrum wireless technology that operates in the frequency band from 2.4GHz to 2.48GHz; this is an unlicensed band that has been freed up in virtually all regions of the world, and by rapidly hopping between different frequencies within this band it avoids interference from other users of this spectrum.

There are two levels of range in the standard: 10 meters as the low power radio standard, and 100 meters for the high power standard. Initial development of Bluetooth will be in the 10 metres range. During 2000, a wide range of Bluetooth products will become available – an example was featured in last month's *Linux News* and Apple have a device called *Airport*. It is expected that within several years, billions of devices will be Bluetooth-enabled.

There are a multitude of potential applications, including 'beaming' applications from PDA to PDA, access to Local Area Network applications such as e-mail, and Web browsing. So how does Bluetooth differ from IR, or infrared technology? IR requires direct line of sight to make a connection while Bluetooth does not.

The range for IR is also very limited in comparison with Bluetooth. Another application that can't be done sensibly with IR is "point to multi-point" also known as one to many applications, such as a lecturer sending study diagrams and notes to a group of students, but it can be done with Bluetooth.

An official Intel Press Release dated June 13 2000 announced "The Intel Corporation and the Microsoft Corporation are developing a road map to provide native support of the Bluetooth wireless technology for the Microsoft Windows operating system during the first half of 2001".

The companies are also working on a standard method for PC platforms to interface with the Bluetooth technology that the PC industry can implement in their products. Intel and Microsoft will also be working with other industry giants, IBM Corp and Toshiba Corp; all hold Promoter group membership status within the Bluetooth Special Interest Group (SIG) and are working together to define PC implementation for Bluetooth technology.

The Bluetooth SIG currently consists of more than 2,000 member companies that are developing Bluetooth products.

"We believe that industry convergence is necessary to enable a unified Bluetooth end-user experience in the PC and Windows environments," said Fran O'Sullivan, Vice President of Mobile Computing Development for IBM's Personal Systems Group. "IBM is working pro-actively with Intel and Microsoft to facilitate Bluetooth development efforts including providing technical expertise and systems."

Said Steve Andler, Vice President of Marketing Portables, Toshiba America Information Systems, Inc., Computer Systems Group: "As a world leader in mobility solutions, Toshiba will provide hardware systems necessary for the software development of Bluetooth wireless technology. Working with Intel and Microsoft strengthens our commitment to the long-term success of Bluetooth and the ultimate deployment of a wireless future."

In another press release Psion PLC one of the world leaders in handheld technology announced that it had agreed to acquire a 3.2 per cent stake in WIDCOMM, Inc. for $5m cash. WIDCOMM is a privately owned California-based wireless networking company and an emerging leader in Bluetooth technology.

WIDCOMM announced that it has secured $35 million in its second round of financing. Led by Texas Instruments, the round's other strategic partners include Alcatel, Conexant and Philips. Sienna Holdings, a Bay Area venture fund, joins as a financial investor.

So exciting times ahead and with so many Big Boys claiming stakes in this new technology it's now just a case of watching and waiting for further development and it will be interesting to find out what Pace may be doing in this area.

For further information about Bluetooth, please see **www.bluetooth.com**

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Speed demon

There's no let-up in sight to the high costs consumers are to be charged for ADSL (Asymmetric Digital Subscriber Line) services. Demon Internet Ltd have announced details of their ADSL services which reflect the stranglehold of OFTEL and BT's re-sale charges. Demon's basic product *Demon Express* will cost £150 inc. VAT to set up, with a £49.99 inc. VAT monthly rental available "later this year", no thanks to BT's delaying tactics.

Compare this with the *BT Openworld* offering which costs £39.99 with a similar setup charge of £150. The residential *BT Openworld* product requires USB support, provided currently only as standard by a *Windows98* PC or a Mac, and uses NAT (Network Address Translation). This means that the subscriber's PC is only on the *BT Openworld* network with blocked ports and not accessible from the Internet at large.

This is good from the security point of view, but also means that you are completely tied to the *Openworld* ISP,

Demon Express GOLD

prevented from collecting SMTP mail or running any kind of server or software that uses specific ports. At least the *Demon Express* entry-level service, still requiring a USB interface, does offer a static IP address, always-on Internet connection and simultaneous phone use.

Demon Express Plus, *Pro* and *Gold* offer increasing data rates and decreasing Contention Ratio, which is the number of other subscribers sharing the local data link's bandwidth. Installation is £250, with seemingly colossal monthly charges of £95, £175 and £290 respectively for these premium services, which do give you the option of NAT or direct access. When you compare Demon's current 256k leased-line charges of £2099 for supplying a router and set-up, with £900 monthly rental, ADSL actually seems quite cheap.

Demon Internet Ltd.
www.demon.net/info/demon_products/access/adsl-launch.shtml

Home page please, James

You may not find the name Henrik Bjerregaard Pedersen of Denmark familiar, but he's the author of some very interesting *RISC OS* programs of interest to Internet users. His freeware application *!WebJames* is a very comprehensive Web server that includes many features such as redirection, caching page server, cgi-script interface and passworded page access.

Although *!WebJames* has a complex configuration file, to get going all you need to do is edit the location of the site's Web pages and the e-mail address of the Webmaster. Common Logfile Format Access log files are produced to simplify analysis, and the log names can be rotated when they become too old or too big, or automatically squashed or zipped to save space.

Also available from Henrik's Web site are some useful freeware CGI-scripts for use with *WebJames*, including a text-to-GIF converter that generates drop-shadowed fancy font text images on-the-fly, a page-counter with selectable colours for up to 4096 pages and a Web Chat system for up to 20 users and 8 chat channels.

While Leo Smiers has been working on his *Flash* plug-in for RISC OS browsers, Henrik has added the missing sound support which is included in Leo's latest version of *Flash* from **http://people.a2000.nl/lsmiers/flash/flash.html**

Henrik's *MakeFlash* application allows RISC OS users to create their own Flash 3 files using a relatively simple script language. It's left to you to work out how to get the actions you want, but there are some example scripts that show what can be achieved, and they work well.



Henrik Bjerregaard Pedersen
www.login.dknet.dk/~henrik/

In brief

Masquerade

Using a cheap PC as a masquerading Linux router to isolate a home Acorn and PC serial or Ethernet network from prying eyes and ears is described on Matthew Lee's Serial Networking site. Step-by-step instructions on setting up the RedHat 6.0 Linux distribution have been provided by Jérôme Mathevet.

Masquerading allows several networked computers to use a single external Internet address and is highly recommended for safety in always-on connections.

www.clementlee.freeserve.co.uk/linuxroute.htm

Go north!

Matthew Somerville's sense of adventure has led him to describe for us the finer points of setting up some of the freeware Internet applications for RISC OS machines. How to configure NewsHound, PopStar, Messenger, NewsBase and Socketeer feature on his site, which usefully tells you which buttons to click and which to leave alone.

More details of latest Socketeer versions can also be found on Andy Carter's site at www.argonet.co.uk/homepages/fruit/software/

www.msomerville.ukgateway.net/index.html

RiscSearch

Patrick Mortara's RISC OS meta-search software for takes a query string and presents it to a list of Web search engines. It then compiles and ranks the results, removing duplicates and presents them as a Web page to your browser.

At present it knows about six: Acornsearch, Alltheweb, Altavista, Lycos, Northernlight and Yahoo – further engine modules can be added.

Riscsearch
www.patrick-mortara.de/comp/search.htm

Contacting me

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On behalf of Mencap

On the crest of a WAV

One area which seems sadly neglected in terms of software on the RISC OS platform – both PD and commercial – is that of sound editing. There are plenty of players and 'trackers' available but if you want to sample your own files and then edit them before burning to CD you're a bit stuck, especially if you want some PD or Shareware software for the purpose.

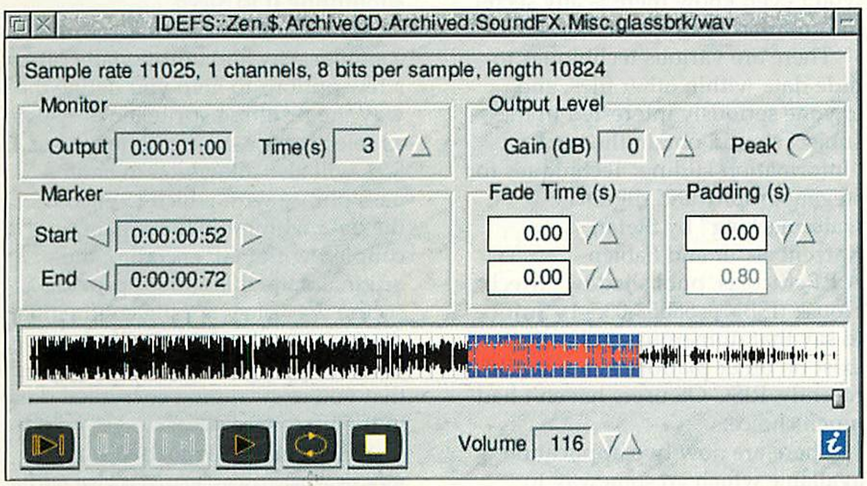
However, R.J. Hancox has come to the rescue with a new utility. *WavEdit* will allow you to edit .WAV format sound samples directly from disc, which means that theoretically any size of sample can be worked on.

Most RAW linear PCM sound formats can be read and any section of the sample can be selected and individually saved out, thus creating several 'tracks' from a single long sample. It incorporates Rick Hudson's *PlayIt* module so that sounds can be played back using video style buttons. Indeed, this is essential for audible previewing the section you have marked.

Effects are minimal, and merely allow you to set a fade-in or fade-out duration (in seconds) and to add a silent (padding) section to the beginning or end of the sample. However, that's not really the purpose of this application, which is primarily to allow you to edit those samples that are too big to load into main memory.

Unregistered users, have a forced limitation of 1Mb, but the application can be registered for a mere fiver, which seems pretty good value if you find it useful.

WavEdit is available from **www.tophole.freeserve.co.uk/software/index.htm**



The main editing window, showing a short marked block

Totally spaced out

WorkSpace is another of indispensable utility that I didn't even know existed until I happened to see it installed on a friend's computer and asked, "What's that?"

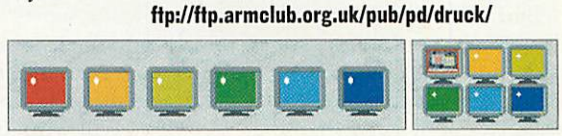
Put simply it's a virtual desktop system that allows you to switch between six independent desktops – with a simple click on an icon. *WorkSpace* is written by David J. Ruck – if you don't like constantly moving windows around the screen, to see what's underneath them, or where you're typing next, *WorkSpace* is about the best solution I can recommend.

Simply click on one of the coloured 'TV screens' and the desktop will instantly switch to a different area. The easiest way to get the idea of this is to imagine that your desktop has suddenly become six times as large and you can view different parts of it. When you switch back to a previous one, all your existing windows will still be correctly positioned where you left them.

With an application such as this, it might be easy to forget which virtual desktops contain the windows you were just using. David has provided two sub-menus to either fetch a window to the current desktop, or to simply go to the desktop containing the specified window. Each sub-menu contains a list of available windows so you can easily locate the elusive one.

Lastly a novel 'select windows' feature lets you 'pick up' windows from the current desktop by dragging a box around the ones you require. *WorkSpace* will then give you the choice of which of the six available desktops you wish to move the selected window(s) to. In all, a very useful little utility – and one I'm surprised I haven't discovered before.

Download it now from **ftp://ftp.armclub.org.uk/pub/pd/druck/**



Select from six virtual desktops, or a mini version

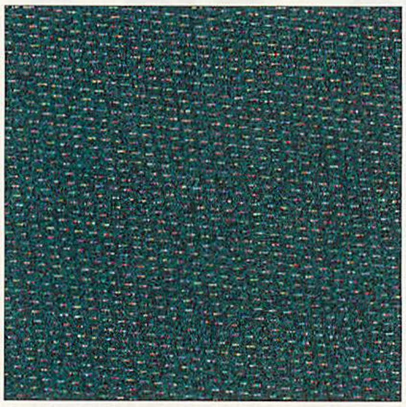
Secret societies

By now, most of you will possibly have heard of the Regulation of Investigatory Powers (R.I.P.) bill currently working it's way through Parliament. This controversial bill is, understandably, meeting fierce opposition from not only computer, Internet users and ISPs but also from civil liberty groups who see it an an infringement of personal freedom and privacy.

Indeed, it can be argued that enforcement of the bill contravenes the Universal Declaration of Human Rights, which states in article 12; "No one shall be subjected to arbitrary interference with his privacy, family, home or correspondence..."

The bill, as it stands, gives authorities the right to force you to give up passwords and encryption keys to intercepted e-mails and computer communications. Refusal could lead to up to two years imprisonment – which is self-defeating anyway, because any person guilty of genuine crimes would simply refuse to give up their password and take the lesser penalty. Refusing to reveal an encryption key would lead to no convictable evidence to confirm whether the data contained plans for global terrorism or just a happy birthday message to Aunty Maisie.

However, there is another way to bypass the bill. That of Steganography – or the technique of hiding messages within innocuous data, for instance a picture or backdrop image. The idea behind this is that you can hide your secret data within some other data which in itself is not secret, or even hidden. This way, any intercepting agencies won't even know there is any secret information being passed on.



Steg's !Help file encoded using a 'sea green' palette

There are various techniques to hide data within other files, and anyone seriously interested in the subject should obtain the book "Information Hiding: Techniques for steganography and digital watermarking" by Stefan Katzenbeisser and Fabien A.P.Petitcolas, published by Artech House (ISBN 1-58053-035-4). Suffice to say that numerous applications exist on other platforms, but until recently, RISC OS users haven't had much choice.

There are now two application available which go someway to enabling users to hide their data. *Stego* by Dr. Nat Queen and *Steg* by yours truly. Both applications don't go the full way to hide data within images, instead opting to create a 'random' sprite file, disguised to look like a backdrop or pattern.

Stego can be downloaded from Nat's web site at **web.bham.ac.uk/N.M.Queen/pgp/acorn.html** and works in two parts; an encoder and a decoder. To hide a file, merely drag your confidential datafile into the *Stego* input directory. It will then be converted into a sprite file, which you can use as a backdrop or additionally hide within other similar files. To retrieve your information again, just repeat the process and drag the sprite file back to *Stego*'s decoding directory and it will be converted back into the original data file.

For additional security you can PGP encode your data before submitting it to *Stego*.

My own *Steg* application works in a similar way and additionally offers a few options to help you define the way the resulting sprite looks – such as selecting a colour palette or size. *Steg* will also allow you to enter a pass phrase with which to encode the data within the file. Again, coupled with PGP encoding the original data, this should provide a secure way of swapping confidential data without the Men In Black eavesdropping, or even knowing that you're swapping encrypted data in the first place.

Steg can be downloaded from **www.vigay.com/riscos/apps/steg.html** and a 'sister' application is available, called *Tiler* – which produces random images which look identical to those output by *Steg*, but with no hidden data at all – to further confuse the 'spooks'.

Unpacking the Macintosh

There is nothing much to describe about this utility – other than the fact it does exactly what it claims; Decode BinHex files. If you regularly receive e-mail attachments from Apple Mac users then you will probably be familiar with their rather obscure method of encoding attachments to e-mail messages: BinHex.

This is a sort of Macintosh equivalent to UUencoding or MIME encoding a message, but less frequently handled natively by e-mail readers (in fact I don't know of any RISC OS e-mail software which natively decodes BinHex attachments).

Usage couldn't be simpler: load onto the iconbar and drag the attachment you want decoded onto its icon. You will need to make sure that the dragged file has a text filetype, but other than that, *DeBinHex* will work out the filename and pop up a small 'save as' window from which you can drag the decoded attachment to a waiting directory window in the usual RISC OS fashion.

DeBinHex is written by Alex Howarth and the version I have (v0.04) has correctly decoded all the files I've thrown at it so far – and having quite a few Mac owning Stateside friends, I've given it a fair bashing!

You can download your very own copy from **ftp://ftp.argonet.co.uk/pub/Acorn/PD/Comms/**

Contacting AU

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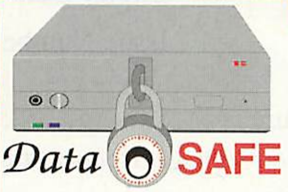
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DataSafe is highly praised, but there's been one criticism. People would like it smaller and lighter so carrying between home and office (or school) is even easier. So we've introduced the DataSafe 'mini'. With all the features of the standard version, this uses a 2.5" drive so it's very small, about 5" by 5" and less than 2" high, and weighing only about 14 ounces! Prices start at £109 without a drive or with a 1.8 Gb drive just £179

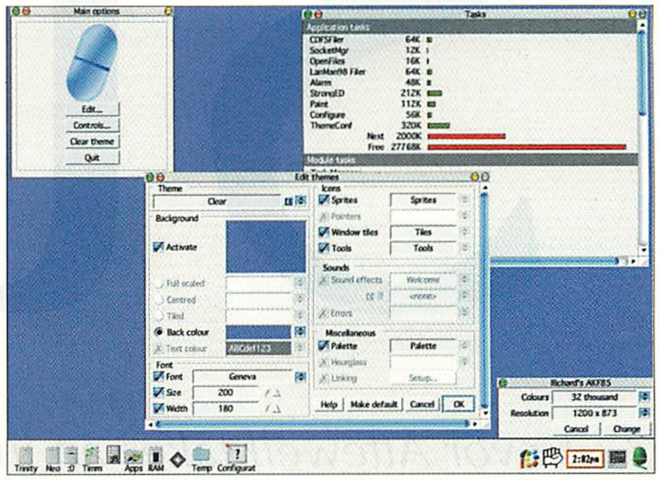
Themes and skins

For some time now, Richard Goodwin, creator of the Web hand-coder's macro assistant *HTML³*, *Acorn User* contributor, webmaster and *House of Mabel* proprietor, has been working on an integrated desktop themes system for RISC OS.

Although the project is still some distance from completion, it has found a permanent home as part of one of the new wave of RISC OS portals, the Iconbar, at **http://themes.iconbar.com**

Much more background information, and beta release downloads of the theme manager and a small number of themes, are available through Richard's own site, at: **www.houseofmabel.co.uk/programs/winthemes/**

Richard's themes system allows for consistent sets of pinboard background image and window furniture to be applied to the desktop, in a similar way to the way some applications allow you to apply "skins" to change their overall look and feel. The manager also allows the integration of customised hourglasses and pointers, desktop font settings and what Richard describes as an advanced colour picker, all of which taken together allow for a complete graphical customisation of the RISC OS working environment.



Although the system currently doesn't support it, Richard hopes to be able to integrate sound effects into the system for individual WIMP events, rather than using the single RISC OS beep.

Richard's *Clear* theme is one of the principal themes being developed, and borrows heavily from the beautiful designs being used for Apple's new incarnation of the Mac OS interface, named *Aqua*, which in turn seems inspired by Apple's hardware designs since the launch of the original iMac. This translucent design ethic has been carried across into a skin for *Oregano*, available as part of the new themes site, at **themes.iconbar.com/oregano/**

Further *Oregano* skins are being developed at a startling rate, and a beta release of software to ease their creation is also available. Most of the skins thus created are stored through the hosts of the *Oregano* mailing list, *Smartgroups*, at **www.smartgroups.com/vault/oregano/Skins**, and are free to download without needing to subscribe to the mailing list itself.

Johannes Kiessling



More online galleries of work created using RISC OS computers are springing up all the time. A stylish collection of bitmap imagery has been created by Johannes Kiessling and is available through his partner Sue Clamp's site at **www.argonet.co.uk/users/clamp/**, which also features scans of some of the A-level art exam paintings by her daughter, Laura.

Johannes' work seems to have been largely created with *Photodesk*, and is generally abstract, making good use of cloned, reflected imagery and careful selections from the range of special effect filters available. A couple of representative samples from the site are printed here.



As always, I'm very happy to showcase readers' web galleries through this column. If you have work Made With RISC OS available for viewing on the

Vantage mailing list

Since the end of 1998, Article Seven has hosted a mailing list for beta testers of Cerilica's *Vantage*. With the release of the final pre-release of the package at this year's Wakefield show, there seems little need now for the beta testers' list. So, with Cerilica's permission, Article Seven have now opened the doors of the list to all pre-release users and interested parties.

To subscribe to the mailing list, send an email to **majordomo@article7.co.uk** with the line *subscribe vantage* in the body text of the email – the subject is ignored. You'll receive a confirmation message, and the list address itself is **vantage@article7.co.uk**

If you have any queries, don't hesitate to get in touch through the address below.

Contacting AU

Andrew Green:
graphics@acornuser.com

Still

Trevor Attewell takes an in-depth look at digital cameras

The proliferation of new digital cameras makes it very difficult for prospective owners to decide which to buy, or even whether to stick to their trusty film cameras until things settle down – which could be a long wait. So camera reviews in *Acorn User* will try to help by providing more detailed information than is commonly found in magazines, whether aimed at Acorn or PC readers.

Pictures taken with the camera being reviewed will be included, but it should be kept in mind that this is simply to give a very rough idea of their quality. Digital pictures are viewed on monitors or as printouts of one kind or another, and these cannot be compared directly with photographs on film, nor will the magazine printing process always reproduce them accurately.

Olympus C-860L

Released in April this year, this product is classed as an entry model, that is, it is aimed at newcomers to digital cameras. It measures approximately 127mm wide x 65 high x 50mm deep, and has a carrying wrist loop, but cannot accept a shoulder strap. It has a standard tripod bush. The lens and viewfinder are near the side of the body (left, as seen by the user), and are protected by a sliding door which also turns off the power supply when closed.



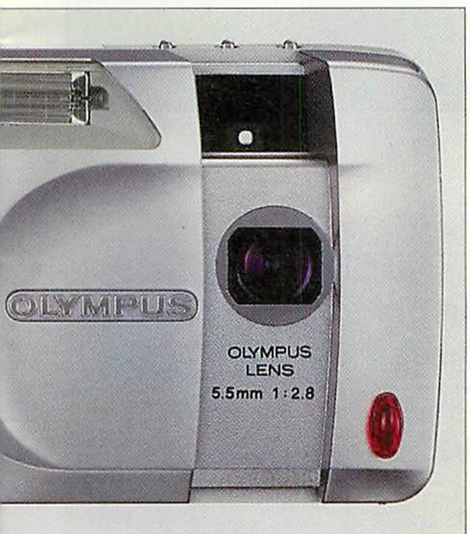
The usual LCD alternative viewer is on the back. For interested photographers the lens has a focal length of 5.5mm, roughly equivalent to a 36mm lens on a 35mm film camera, with five elements in four groups, and an aperture of f2.8. The camera is normally supplied with 8Mb of memory, but larger memories up to 64Mb are available.

It is possible to photograph objects as close as 100mm, the area covered being about 130x90mm. This macro facility is obtained by pressing a button on the top of the camera. Another button changes to "telephoto", with x2 magnification.



This back-lit garden scene, in a slight mist, has been handled well, with detail in shadows and bright areas.

life



There is a self-timer with 12s delay and a warning indicator.

The power supply comes from 4xAA batteries, which can be NiMH (nickel metal hydride), lithium or NiCd. Manganese types must not be used and batteries with flat terminal configurations will make unreliable contact or none at all. Alkaline cells are usable, but some may give a limited performance. Details are given in the manual, where NiMH rechargeables are recommended.

Olympus offer a mains adaptor, available from Spacetech, which replaces batteries when mains outlets are available. Because of the high occasional current demand (up to 2.2 amps), and to avoid using large transformers, the adaptor is a switched-mode type, which is smaller and lighter. The camera comes with a lead to connect it to a serial port when using Spacetech's software. Three manuals (German, French and English) are included, each running to 112 A6 pages. Take my word for it – you will need one.

Choice of quality

The C-860L uses a 1.3Mpixel CCD array. This translates to 1280x960 pixels on screen, with 16 million colours. There are several ways in which this capability can be used, depending on the quality of pictures required. Starting from the low end, the least demanding is a picture of 640x480 pixels, which will be enough for those who do not need a good picture larger than about 8x6 inches on a 14in. monitor. This format is SQ (standard quality, compressed), and allows about 122 shots with an 8Mb memory.

Next higher is SQ-HIGH, with the same size image, but using a higher quality factor, giving 32 pics. The middle setting is HQ (high quality), which gives an image twice the dimensions of the SQ format, and overlaps a 14" monitor screen, offering 36 shots. SHQ uses a higher JPEG factor, giving 19 pics, and SHQ-High images are in TIFF format, and demand about 3.7Mb of storage per picture. Two such images can be accommodated on an 8Mb card, but on just one occasion I couldn't get the second. To be practical you need lots of memory if you intend to use this setting more than rarely.

The change in picture quality when switching between adjacent factors is not great, and it seems likely that most users will stick with just two – SQ for lots of pictures and SHQ as a good compromise between the best quality and the memory required.

The time taken to secure the picture has two components, namely



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Epson Stylus Colour 850	£199.00
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Pineapples Virus Protection Scheme has been running for over six years and is still being updated with new viruses on a regular basis. New software versions are sent out to members during the year, and the total number of viruses which can be removed is well over 200. The latest version is now scanning at up to four times faster than previous versions despite coping with many more viruses.

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'If you're interested in virus protection, join the Pineapple Virus Protection scheme and buy Killer. Accept no alternative - 'Acorn User Feb 96

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Colour Scanners

The new Epson GT7000 is great value and the Photo version which includes a transparency adapter gives excellent quality on both transparencies and negatives. Our new SCSI parallel port adapter cable makes this excellent scanner very affordable. All scanner prices include Imagemaster and Twain software. The cable supplied with the scanner has a 15w 'D' connector.

Epson GT7000 - SCSI	**£259.00**
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Essex IG1 1XT
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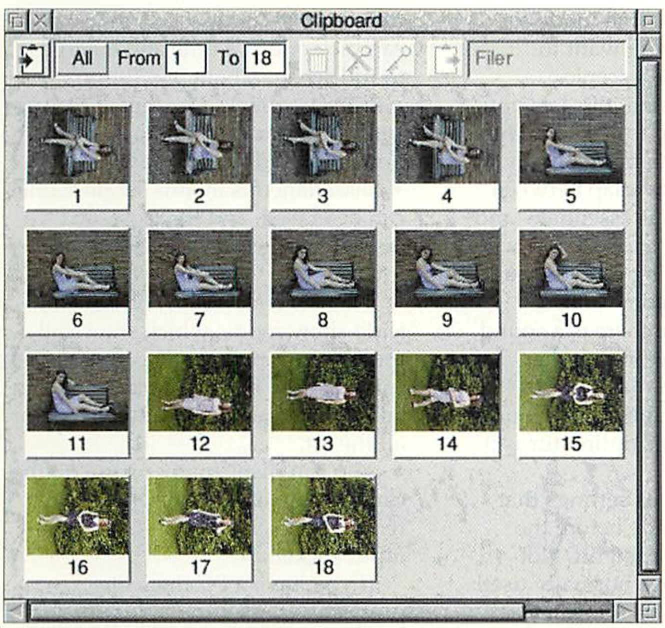
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Thumbnails of all or selected pics in the camera can be downloaded to Photolink for reference and downloading

taking the picture and then downloading it into the camera's memory. Only after that can another picture be taken. For all the modes other than SHQ TIFF the image capture time is about 2 seconds, and the download time is about 4 to 7 seconds, depending on the mode. SHQ-TIFF takes nearer 4s to get the picture, and about 36 seconds to download it.

These figures are for immediate full pressure on the release, for example to grab an action shot. In many cases there may be a warning of the event to be photographed, giving time to frame the picture, then holding it with light pressure on the shutter release. When the event occurs the heavier second pressure is applied, when the picture will be taken without further delay, and downloading can start.

Ways with flash

The camera has a built-in flash, which can operate in several modes. It can be switched off altogether, or it can be set to "auto", in which case it will supply enough light for most close-up subjects. It can also be set to send pre-flashes to counteract the "red eye" effect. Another use is for fill-in, in which it ignores other light sources.

It can be used in a "slow-shutter sync" mode, when it will fire during the first half of a long shutter release time, for example in night photography. This mode can also include the red-eye reduction, which can be useful, especially if the eyes in question have enlarged pupils due to dark adaptation.

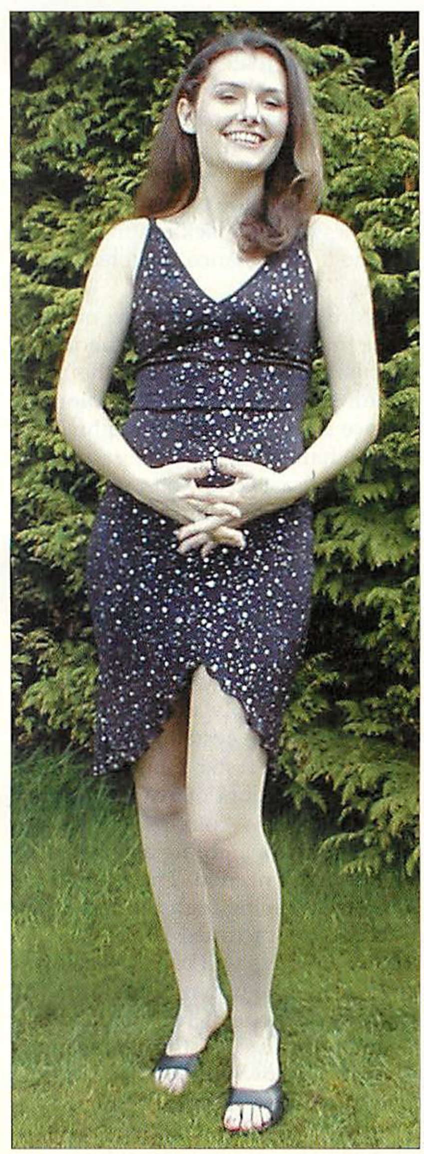
The focus is set automatically at the distance of whatever object appears in the area between four lines, visible in the viewfinder. If this doesn't suit, you can use the well-known technique of pointing the camera directly at the area that you want to be sharp, then putting the first pressure on the release button to hold that distance while you re-compose the picture. Increasing the pressure on the release takes the photograph. Note that the exposure will also be based on the brightness of the area you locked on to, but this is seldom a problem in practice.

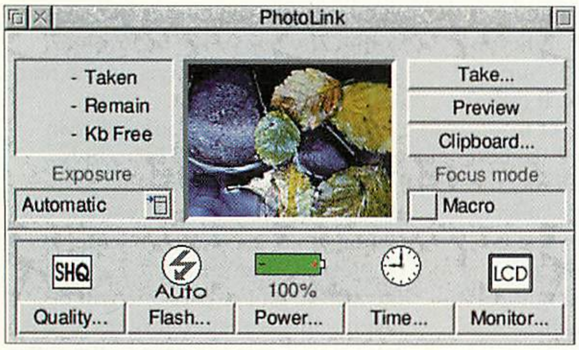
Why the manual

The options covered so far are only a few of those available. Many more can be obtained from a series of menus, accessed by pressing a menu button on the top plate when the lens cover is open, which displays the first menu on the LCD screen. Further presses on the button display more menus. The options on offer within any one of the menus are selected by more buttons on the rear and top of the camera.

To describe every possibility in every menu would be incredibly tedious, so the following list gives the bare bones. In every case the OK button, alias the shutter release, must be pressed after setting to confirm the action, otherwise none will be taken – this is easy to forget:

• Exposure compensation allows the





The easy-to-use main window for Spacetech's PhotoLink software

auto exposure to be manually over-ridden by up to 2 "stops" darker or lighter;

• Spot metering mode – not quite a true spot meter – it senses the area within the four lines in the view finder, and sets the exposure regardless of any backlighting. It also sets the focal distance, as noted above;

• Recording mode selects the quality of the image, also discussed above;

• White balance: "Bright" is the default source for which the colour balance is set, typically sunlight. This can be changed to improve results under overcast conditions, or where tungsten or fluorescent lighting is the main source;

• ISO is quivalent to specifying what ISO film number you might have chosen if you were using film, and uses part of the standard ISO range of figures (well, they had to use *some* numbers). It simply alters the sensitivity of the system, a higher ISO allowing a faster "shutter" speed for a given amount of available light.

The default is Auto, which sets a high ISO in low lighting as long as the flash isn't needed. The manual warns that forcing high settings will give a grainy picture. My guess is that few owners will use this facility – but I could be wrong.

• Sequence Mode, if set, will take pictures one after another for as long as you hold down the release button, or until memory is full. The higher the selected quality, the longer the interval between shots must be.

• Panorama mode for when you want to capture a scenic panorama, this lets you take up to 10 pics, which you line up manually. Some overlap between frames is essential – and a rigid tripod fitted with a rotating camera head won't come amiss.

• Beep: there is a sound while working, the camera may beep to warn you of a possible error (yours). If it annoys you, this option turns it off.

• Reset saves various settings that you might have made before the camera power is turned off. Not applicable to settings normally used on individual frames, for example exposure compensation, white balance and so on.

Displaying recorded pictures turns on the LCD monitor window and checks the memory card. You can look at each previously saved picture in turn.

• 0Index-display mode displays up to nine pictures at a time as tiny thumbnails, about 10.5x 7mm. You can pick one at a time and enlarge it to full screen (about 33x22mm).

• Protection locks a specified picture against removal. This can also be done in the Index-Display Mode.

• Miscellaneous menus single frames can be erased, and the close-up display mode (picture size x3) can be invoked.

There is a slow (15s) or fast (2s) slide-show mode, which shows all the pictures in order. This too can be run from the Index-Display mode, and you can wipe out any picture, or all the lot.

You can display any picture in the camera on a television set or video recorder which has a suitable video input socket.

If you have a PC there are provisions for setting up various records and picture identification, for use with PC software.

Acorn software

The Spacetech software, called *PhotoLink*, covers a number of digital cameras. The 12-page A5 manual is easy to follow, and its window grabs, though in black and white, give all



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Line width scaling nudge buttons.
Preferences option for Draws default grade & interpolate levels.
Writable options for grid spacing and divisions.
Colour coded on screen manuals.
New "Copper" or Standard RISCOS window templates.

Toolbar features
Autoscrolling toolbars that follow the mouse pointer.
Nudge buttons for font size, height and line width.
Shows currently selected font size and line width ticked on menus.
Writable pointsize & height options on font menus.
Extended versions of Draws line width and point size menus.

New Tools
24 bit TIFF export at up to 1200dpi.
OLE editing of Sprite & JPEG images.
OLE editing of text areas.
Bolt-on toolbar, allows other apps to be integrated into DrawWorks.
Metaliser tool to shade objects with metallic tones.
Object spacing and positioning tool.
Set the leading (line spacing) for text objects.
FontFiend replaces Dr Fonty as font editor.
Tracing of Bitmap images to convert them to vectors.

Replace any colour with any other colour.
Keep one colour intact while replacing other colours.
Colour filter - convert colours to their nearest named or Puretint equivalents.
Object rotation dialogue box.
Nudge buttons to rotate in 1 degree steps.
Flip objects in both X and Y Axis.
Object scaling dialogue box plus 5% nudge buttons.
Scale an objects line widths without altering its size.
iDesigner font suggestion tool now integrated into DrawWorks.

Improvements to existing features
Soft edged shadows.
Use PureTint and named colours for shadows.
Use PureTint and named colours in the lining tool.
Automatically produce darker shades of named colours.
Control over grey component replacement when producing CMYK separations.
Anti-aliasing of JPEG images.
Export of sprites and GIFs at up to 1200dpi.
Import bitmap images as either 8 or 24bpp.
Import ArtWorks files as bitmaps.

EPS (PostScript) improvements
Improved EPS importer.
Adobe Illustrator 7 PostScript previews.
Include sprites in Illustrator EPS files.
Produce PostScript Type 1 fonts with full hinting.
Integrated PostScript compatible font names database.

Additional features (using supplied bolt-on applications)
Improved on screen rendering & dithering in 256 colour modes.
Drawing of other shapes such as polygons, stars and crosses.
Simple perspective drawing tool.
Produce rotated and transformed patterns from objects.
Gamma colour control for RISC PC monitors.
Design on screen graph paper.
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Requirements
RISC OS 3.6 or later, 8Mb of RAM and CD-ROM drive. Also available DrawWorks Millennium for RISC OS 3.1+, requires 4Mb of RAM and CD-ROM drive, rrp £21.50

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A typical shot with bright sun behind the camera. The high voltage cables are just visible at SHQ quality

the information needed, in a clear progression. The software also includes some very useful controls – for example, the camera can be operated from it, giving a remote control facility.

It will also set up various camera options much more quickly and easily than can be done manually on the camera. Any images can be selected for protection against removal, and thumbnails can be handled much as in your desktop. Images can be saved as Sprites, GIF, BMP (Windows), BMP (OS/2), Targa or PBM plus, and can be converted to greyscale or a reduced number of colours if computer memory is short.

Owners of *Photodesk* can automatically collect pics directly into its clipboard, ready for immediate use. There is more, but this is the gist. We have to use a link between the camera and our computers, and it's a pleasure to find that the link has excellent additional functionality of its own.

How did it handle?

It took some time to check out everything on offer in this model, and I can confirm that it all works, and the camera does all it claims. The body is comfortable to handle in the right hand, but there is little room for left-hand fingers on the front panel. However, the viewfinder shows any accidental obstructions.

I was not completely happy with the "shutter release", the upper surface of which is virtually flush with the camera top. I prefer releases which protrude so that they are easier to find in the dark, especially when one's eye is glued to the viewfinder. A good feature is the light pressure needed for the first part of its travel, which sets up the flash (if used) and generally prepares the camera for action. The second pressure required more force than I expected, and care was needed to avoid moving the camera as the picture was taken.

It is also easy to push any of the buttons on the top accidentally while holding the camera to your eye, though this is unlikely to cause problems, because a warning bleep sounds if the button pressed performs an immediate action, such as changing the flash setting. The inevitable delay while pictures are stored is long enough to make it unattractive for sports coverage, but digital cameras which are more suitable are also very expensive, and the C-860L is not suggested for this use.

The picture quality is very good and represents a useful step up in this price range. The actual quality must depend on your monitor, and your printer if you want permanent copy, though the term "permanent" must be taken somewhat loosely these days, following fading tests on colour printer inks, published in the British Journal of Photography.

Some may think that this camera is over-complicated. Others may prefer the term "sophisticated". Either way the camera has been designed so that it can be used as a simple point-and-shoot model, while providing advanced capabilities for those who can make good use of them, all at a realistic price. END

Product details

Product:	C-860L including PhotoLink software
Price:	see separate panel
Supplier:	Spacetech Ltd., 1 The Courtyard, Southwell Business Park, Portland, Dorset
Tel:	01305 822753
Fax:	01305 860483
Web:	www.spacetech.co.uk
E-mail:	rachelle@spacetech.co.uk

Price details

Olympus camera C-860L (inc cables): £299.99

Memory cards:
8Mb £29.99 16Mb £49.99
32Mb £99.99 64Mb £179.99

Direct sublimation printer (runs directly from camera and gives glossy photos): £399.99

Soft carrying case: £9.99
Leather carrying case: £19.99
AC mains adaptor: £69.99

Thanks also to our two models Emma and Nicole; to Herald Communications for supplying the camera and to Spacetech for the software.

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POSsum EPOS system £Call

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Me old China

Steve Turnbull takes RISC OS technology into another world

Let me make a useful little recommendation: Never take a week off work when that week coincides with the putting to bed of a four-weekly magazine. Working typically from 6:00am to 11:00pm in the previous week is not conducive to one's state of mind.

But enough of my problems – and many thanks to ex-*Acorn User* editor David Matthewman for stepping into the breach while I was away, and ex-Production Manager Alan Jones for backing him up.

It was two and a bit years ago that I first did a charity bike ride on behalf of Mencap, on that occasion I and other brave souls rode across the Sinai peninsula, a mountainous desert waste about 7000 feet above sea-level. It was hot and it was dry, and equipped with an A4 and a digital camera I made it across.

When the message came through that there was a trip to China I felt compelled to make it, it's true that the lure of the exotic is used to get a group of crazy people to raise money for charity, but then it's a stunt like any other – and it can really capture the imagination.

On the first trip I had collected money in a simple "give money now" kind of way, which worked to a point but, it has to be said, the RISC OS market was considerably larger then. This time required something new to entice the generous people who make up that market to give even more.

Paul Johnson had become very well known for his charity projects, creating the excellent Kosovo CD. So we teamed up and while he created the twin China Bike Ride CDs, I set about getting myself fit – no mean task, I hadn't been on a bike since I got back from the Sinai desert. I don't really like riding a bike – which makes the whole thing that much more worthwhile.

The production of the CDs themselves was sponsored by the big three hardware manufacturers: Castle Technology (who did one) plus Microdigital and Riscstation who did the second.

Meanwhile I persuaded the local Outline gym – and I do mean local, it's ten paces from the *Acorn User* office in Stockport – to discount its membership fee (as it was for charity) so I could train regularly. Frankly it's hard to think of an excuse not to train when the gym is barely thirty seconds away, and the journey is undercover all the way.

So everything was set, with the adverts going into *Acorn User*, the various outlets through which the CDs were going stocked up the money started to come in.

The technology

It has to be said that for the Sinai trip I organised the equipment with hardly a day to spare and as a result I didn't use the software correctly, resulting in not-so-good pictures. This time I was a little bit better, I had everything with about three days to go.

The A4 I personally bought from CJE (okay, a small discount on the grounds it was for charity), the digital camera was, by sheer coincidence, an Olympus C860L as reviewed in detail by Trevor Attewell in this very issue. That







Three pictures taken with the Olympus C860L, the one above shows an early morning with bright sunshine – preparing to set off on the first day – none of the colours have been re-touched although print isn't entirely accurate. The middle picture is using the flash at night, the green light is part of the waterfall and not an aberration – this hotel has very nice and quite over the top in its facilities, stuck in the mountains it still had good mobile phone contact. The final picture is a close-up on our Chinese lead guide, Dali, the quality is very good even for a picture of this type.





These three images came from the Kodak Picture Disk, and are of much lower quality to the digital camera. The two on the left are the complete image reduced to 20 per cent of their original size, the one on the right is at 55 per cent – that's me on the left with some friends

was borrowed from Spacetech, again.

Also as before, it has to be said that Spacetech's excellent software does not work on anything older than RISC OS 3.5 so *Photolink* was out. Instead I once again contacted Irlam Instruments for a copy of their *Snapshot+* software which works with a wide selection of digital cameras, not just Olympus ones, and only needs RISC OS 3.1

The A4 was supplied as Acorn intended, simple *!Boot* file and tragically ancient applications. Following the route of two years ago I loaded up the driver for Cumana's *PSLCD*, the parallel CD-ROM drive and installed the new universal boot – stripping out all the unwanted files as it does take up rather a lot of hard disc space.

Then on went *Snapshot+* and it was tested with the camera, it worked slowly but effectively. And this time I would always remember to switch to JPEG output. I once again failed to install a word processor – but as I was planning to create Web pages a text editor was just fine.

One thing that was bothering me was recharging the A4, in Sinai the first two nights were camping and through extreme care I had managed to keep the A4 alive by only using it for the minimum of time.

But this time we were in hotels every night, I *should* be able to recharge, shouldn't I? One thing I did determine before I went was that China was on the same voltage as us, and I managed to pick up an adapter at the airport before we flew out, hoping it would work.

It was a risk but thankfully it paid off. China has a variety of socket designs, the hotels usually had two of the socket types in every room – for my general impressions of Chinese hotels you'll have to read my Web diary, **www.cix.co.uk/~turnbull** – you'll find my Web site to be spartan, it's been designed for fast loading and easy navigation. It isn't pretty but it is quick.

The trip

Strangely this trip seemed far less adventurous from the technology viewpoint, I had already established that the technolgoy would work on the previous trip. I had plenty of power for re-charges and the camera simply worked as expected.

Two years ago what I was doing was unusual, but as you can see from the panel *Other people's technology* this time I wasn't alone even on this single group. Not everyone wandered around with digital equipment, but no one found it particularly exciting. I could get a little burst of interest by demonstrating the LCD display on the camera but the technology is far more normal now.

On the earlier trip we took underwater shots with a throwaway camera and had them dumped on to PhotoCD, we had the digital camera images and there was the APS camera, all these were different and interesting.

This time I have experimented by having the 35mm film converted to Kodak Picture Disk, some of which are on these pages – you do get JPEGs on the disc which is good, but they are very small and can't hold a candle to the digital camera. If you want digital quality from traditional film you need PhotoCD

Let's hope that next time some very interesting new technology comes along just so that I can have a play in a foreign land. And don't forget, if you haven't bought your China CDs yet, please do it now, there's only a few left. **END**

Other people's technology

I guess I'm old hat now, never mind that I'm using eight year old technology – although the fact that I *can* use it is a testament to its quality – but then there was Stuart.

Stuart had planned to update his Web site from China, for that purpose he had a Nokia Communicator which is a very nice piece of kit – a large mobile phone that can use the three most popular mobile phone protocols, built-in modem, fax software, keyboard, the works.

Unfortunately he hadn't thought of one thing: When dialling from China his free ISP refused to accept the call, as he obviously wasn't ringing from the right phone. Had I known that mobiles would work I would have got myself a Compuserve account – they have nodes in just about every country.

His back-up was to write out daily reports and fax them through the machine back to a friend in the UK. In fact he sent a fax for me, and was promptly rung back by the person receiving the fax. The reception quality was crystal clear. Stuart told me he'd had no trouble picking up a signal anywhere that we'd travelled in China and there were a lot of mountains.

And then there was the chap with the digital video camera. Now I have to say I'm not one for video, in fact I have to work hard to remember the camera. But again it was a cute unit, 45 minutes of high quality record time. At least my camera was reasonably up-to-date.

Next time – and yes, I do think there will be a next time, perhaps in another two years, I'm willing to admit I enjoyed it this time around – I'll should have some quality RISC OS kit.

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[1] - ISDN line and ISP account not included. [2] - Each connected computer must be equipped with a 10BaseT network card. NOTE - PSU, Network cabling for ONE computer and ISDN Cabling is included with the unit.

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Kinetic StrongARM Upgrades

New

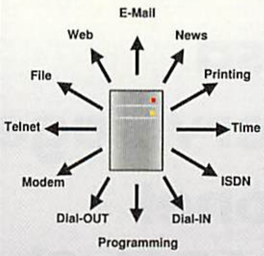
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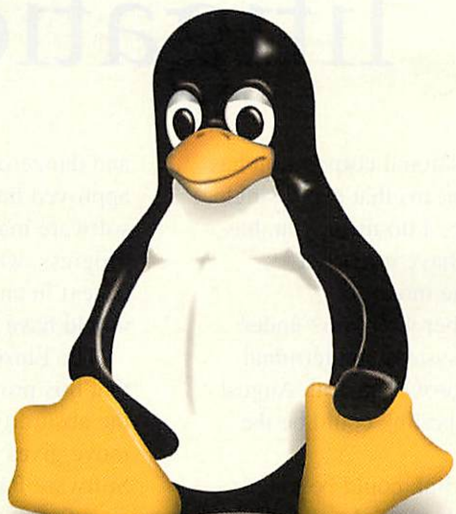
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ISSUE 6 SEPTEMBER 2000

BT gets litigation fever

Yes it's true our very own multinational corporation has gone all American on us, and it means that every single person reading this article, and yes I do mean you, has committed a heinous crime: You have utilised a hyperlink without giving BT some money.

According to U.S. patent number 4,873,662 under the name "Information handling system and terminal apparatus therefor," put in for approval on 15th August 1980 and granted in 1989, the hyperlink could be the intellectual property of BT.

Let's try that again: "the hyperlink could be the intellectual property of British Telecom". Looks like they're doing a Microsoft.

This derives from the Prestel and Viewdata systems back in the 1980's which many of us remember and, as we recall, there was the ability to select from a series of options which took you to different pages.

The report in the online news service The Register went on to say that BT believes its case is solid, but will restrict its scope to ISPs and not individual users. Scipher PLC has been retained to represent the firm's interests in this dispute. Any award will be pumped into the company's network and its research and development department. And, to be honest, looking at the content of the patent itself it really is a description of a hyperlink but can it really be allowed to stand?

The fact remains that software patents are disastrous and dangerous, for a start by the time patents are approved the world has moved on. Nine years in the software market is an eternity. But it also stifles progress, what if someone had patented "emboldening of text in an on-screen document"? Desktop publishing would have come to grinding halt.

The EuroLinux Alliance put out a release declaring that this provides "the world with a brilliant proof of the absurdity of software patents" and continues "BT's move gives a brilliant overview of the great dangers of Software Patents in the information society:

• Software patents create tremendous judicial uncertainty, thus blocking innovation.

• Software patents create monopolies on Internet standards, thus blocking competition."

The Alliance says more: "the absurdity of the software patent system as it stands in the U.S. BT was granted its patent nearly 15 years ago for a software concept which may have seemed new and inventive at the time.

"But such a patent, by being so abstract and general, has actually given BT the right to strangle the development of the World Wide Web and a lot of related technologies, which owe nothing to the inventive effort of BT. Even BT themselves took more than 10 years to discover that the scope of their own patent included hyperlinks on the Web."

Thunderbirds are go

ESC combines Linux and AMD Thunderbird to create the first shipping Linux web servers using the newest AMD processor.

The new Athlon is the fastest personal computer processor available in the mid-price market. "Combining Linux with the new Athlon Thunderbird in our new family of servers means that users can have advantages of the latest technology, speed and open source in one machine," stated Layne Heiny, ESC Technologies Vice President for Research and Development.

ESC Technologies is one of the oldest, webcentric personal computer builders. ESC customises servers, workstations and PCs, to perform as requested for Internet service providers, digital studios, animators, computer programmers, scientists, and other businesses. Each client has unique requirements for reliable computer performance. The LinBird server family offers companies and power-users the uniqueness of a flexible operating system and the most efficient CPU.

"This server family is an exciting and important step in allowing companies to use Linux with the newest, fastest, PC processing units available," said Robb Lovell, founder and principal artist of **IntelligentStage.com**. Lovell, a computer programmer, artist, and dancer, builds interactive multimedia performance art installations and uses Linux to create telescope control systems.

Open critical mass

Mission Critical Linux, Inc., the cutting-edge Linux products and services company, has announced it has released the source code for its innovative, high-availability Kimberlite cluster technology to the Open Source community under the GNU General Public License (GPL).

Using off-the-shelf commodity hardware running any Linux distribution, Kimberlite delivers exceptional high availability in enterprise computing environments while guaranteeing data integrity – even in the face of multiple hardware and software failures.

This announcement reflects the strong commitment Mission Critical Linux has made to support the Open Source community in its efforts to advance the adoption of Linux in the enterprise. "The Linux market has a deep need for a well-designed open source high-availability CPU and storage failover package for enterprise systems," said Brian Biles, VP of Business Development for VA Linux Systems. "We are delighted to join Mission Critical Linux in support of the release of their code under GPL license as a great step toward building this software with an Open Source community."

"Mission Critical Linux's release of its high-availability, fail-over cluster technology is significant, not only because it helps solve important problems, but also because it is available as Open Source software under GPL," said Bill Claybrook, Research Director for the Aberdeen Group. Kimberlite is available for download from the Company web site (**www.missioncriticallinux.com**); detailed technical information about Kimberlite, as well as the mail archives used by the community for collaboration, are also posted.

"Kimberlite technology represents a giant step in the evolution of Linux in the enterprise; issues concerning availability and data integrity will no longer be a roadblock to wide-scale acceptance of Linux in the high-end server market," said Moiz Kohari, President and CEO of Mission Critical Linux.

"We are delighted to be able to share our knowledge and expertise in this area and look forward to collaborating with the Open Source community to extend the reach of this technology," he added.

"This is exciting news," said John "maddog" Hall, Executive Director of Linux International. "Mission Critical Linux is releasing technology that will be of great interest to both Open Source developers and to those who have made a strong commitment to Linux in the commercial arena."

In late July, Mission Critical Linux also launched branded cluster solutions built on Kimberlite technology. These solutions add full-product qualification on leading hardware and Linux distributions, product warranty, and support services to the Open Source technology.

Well met by Moonlight

Moonlight Systems Inc. (**www.moonlight.com**) recently unveiled plans to deliver enterprise-grade applications optimized for Linux server deployments and the fast growing Application Service Provider (ASP) market.

Moonlight Systems is planning to employ an open source strategy in developing and delivering its products.

The company was founded by successful entrepreneur Bobby Mukherjee, who founded Private One, the secure e-mail company that was sold to NBC Internet (NBCi) in August 1999.

"The market for Linux servers is large and growing, especially in the rapidly growing ASP space, and there is an emerging need for enterprise-grade applications optimized to run on these servers," said Mukherjee.

Among the first applications, planned for this fall, will be a set of server replication tools to simplify software roll-outs at large server deployments. Future offerings will be based on the best available open source projects suited to this market, and in-house development efforts.

When building products based on existing open-source projects, Moonlight Systems will compile and test code, and will provide added features, documentation and support.

Mukherjee commented on the Open Source approach: "Creating Moonlight Systems gives us an exceptional opportunity to rethink the way software is developed and delivered. Access to open source development initiatives will allow us to leverage the most innovative technologies available, so that we can produce better products, faster.

"By providing the source code to our customers we will fuel the distribution of open source code and continue the innovation of our products through the proven model of collaborative development which the Linux operating system, the Apache Web server software and the Perl scripting language are testimony to."

Moonlight Systems will depart from standard software industry practice, by providing the source code for its applications to customers and partners, to protect and enhance customers' investments in software, and of fostering ongoing innovation and collaboration.



In the pic

The next generation of PC graphics cards have just hit the shelves from two of the world's largest graphic card chipset manufacturers NVIDIA and 3DFX.

NVIDIA GeForce2 GTS has been licensed to major component manufacturers ELSA, Creative Labs, Leadtek, Guillemot and ASUSTeK, plus PC manufacturers Dell, Compaq, Quantex, and Hewlett-Packard have announced the GeForce2 GTS will be featured in there new high end PC models

NVIDIA's single-chip processors enable high-frame-rate 3D, 2D graphics, and high-definition digital video processing. Optimised for both Microsoft Direct3D and OpenGL APIs: NVIDIA claim the new chipset sees "increases in geometry processing power and radical new per-pixel shading features unmatched by any other graphics processor" and many of the industry standard benchmarking tests seem to underline this.

The GeForce2 GTS is an upgrade on the original GeForce architecture that for the first time saw many graphically intense processes such as texture and



lighting removed from the computer's main processor onto the graphic card processor or GPU. The new card as well as adding the pixel-shading feature also sports improved 333Mhz RAM and an Advanced Graphic port optimisation of x4 or 1024 MB/second. Initially the card is available in a 32MB version with plans for a 64MB version later this summer.

More information available at **www.nvidia.com**

On the flip side graphics rivals 3DFX have released the all-new voodoo 4500,5000 and 5500.

Voodoo5 5500 AGP is the first consumer graphics board to offer application-independent, 3D API compatible, real-time, full-scene hardware anti-aliasing (FSAA). Anti-aliasing is a 3D-graphics rendering technique that eliminates visual artefacts such as jagged edges, moiré patterns and pixel popping. 3DFX claim "The result of utilizing the Voodoo5 anti-aliasing technology is a much more realistic 3D rendered image".

The company claim "the pre-order campaign for the Voodoo5 exceeded last year's Voodoo3 program sales by nearly 25 percent and anticipate a "high retail demand for the Voodoo5 5500". This pre-order boost will be a shot in the arm for 3DFX whose Voodoo3 release last year was greeted with average reviews worldwide, many felt this was due to the rapid technological advances by NVIDIA with the TNT2 and later the Geforce range of graphic cards which unlike the Voodoo3 allowed 3D rendering in 32-bit colour at a similar price tag and the decision to manufacture the cards themselves and not allow licensing of the chipset as they had previously done with the phenomenally successful Voodoo1 and 2 cards

The new Voodoo5 5500 exploits the power of two VSA-100 graphics processing chips running in parallel by coupling them in a Scan Line Interleave (SLI™) mode configuration and performing 3D acceleration from both chips simultaneously the result is a doubling of overall 3D performance. The Voodoo5 5500 features the company's proprietary T-Buffer™ digital cinematic effects engines well as 64MB of video memory to facilitate rapid loading of textures and high-resolution gaming. The 350 MHz RAMDAC supports resolutions up to 2048x1536 and 32-bit 3D colour rendering with a fill rate of 667-733 Megapixels Per Second.

The Voodoo5 6000 which will sport a staggering 128MB of memory will be available late summer

More information available at **www.3dfx.com**

IBM expanding support for Linux

Computer giant IBM has announced an expansion of its commitment to Linux with new hardware and software offerings and a set of initiatives. IBM will offer its

ture

ThinkPad A20m and T20 models pre-configured with Caldera OpenLinux eDesktop 2.4. IBM claim the pre-loaded software will help developers and IT professionals dramatically reduce the time needed to set up and tune the systems.

SuSE Linux for RS/6000 has been tested and certified, for the 43P Model, 150 entry servers and workstations and the F50 deskside servers. Support for other RS/6000 products will be added later this year. IBM also announced plans to offer Linux on AS/400, a new stream of e-business applications that complement AS/400 data transaction server for mid-market customers.



The IBM WebSphere software platform will now support Linux applications from simple Web publishing through enterprise-scale transaction processing. The Standard and Advanced Editions of WebSphere Version 3.0.2 include integrated business Web content development tools and Web site management capabilities for Linux development, deployment and integration with other e-business systems.

Also available new is the Small Business Pack for Linux. IBM feel the new software will enable small and growing companies to realise significant cost savings, applications with the expanding package supporting features such as messaging and collaboration, Web application serving, and managing e-business data. The offering includes DB2 Universal Database, Lotus Domino Application Server and WebSphere. The Standard Edition is alas not due to be released until Dec. 2000.

Irving Wladawsky-Berger, vice president technology and strategy at IBM stated: "Marketplace momentum for Linux is growing because of its universal appeal which brings with it the potential for huge innovation across the industry, much as we saw with the Internet five years ago. With these offerings, IBM is affirming its support for Linux and enlisting the support of its partners to increase Linux penetration among businesses of all sizes."

For more information about IBM and Linux, visit **www.ibm.com/linux**

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Beware, pits!

So you've decided to take the plunge and install a GNU/Linux system? But what next? There are a number of common pitfalls that newer users will encounter during their first experiences which, with practice, can be easily overcome.

The popular GNU/Linux distributions tend come with a reasonably sophisticated (often graphical) installer, quite capable of configuring a basic setup "out of the box". Some distributions exceed others in terms of "new user friendliness", however for the most part the "distros" have evolved to the point that we shall not concern ourselves too much with precisely which of the distributions you "should" use. I personally use RedHat, SuSE, Debian and Slackware-based systems and find RedHat to be one of the more "new user" friendly distributions out there – while Corel have received accolades for their ease of use, they have a poor track record within the community.

In addition to the increasingly complex installers (some even allowing you to play games while the install takes place), most distributions now come with a range of automated tools to help you to configure your peripherals and other system components without too much hassle – it is well worth your time becoming familiar with these as is the effort to read the extensive manuals and other documentation available.

As a new user, you will find that there is a wealth of software already on your system after installation and it will take you some time to get familiar with it. Not all software is perfect however most of the functionality you could want is catered for through some tool or other.

At this point, it is worth suggesting that the reader get acquainted with their local Linux "gurus". The best place to start would be with their local LUG or "Linux User Group" (such as **www.oxlug.org**), refer to **www.lug.org.uk** for a listing of local LUGs. I and many others are active members of LUGs up and down the country and will usually do our best to answer any questions. We even hold special "install fests" and other meetings for those taking the plunge for the first time.

The first major pitfall on the road to true Linux enlightenment is often in configuring the graphical windowing system. Most distributions typically use XFree86 and will probably come with a tool for this task. RedHat uses "Xconfigurator" and SuSE has "Sax" for example. The current widely used version of XFree86 – 3.3.5 or 3.3.6 – does not include support for autodetection of various features of your graphics card or monitor.

This is changing in version 4, however it will take time for distributions to perform the switch over. In the meantime, you may edit your configuration files to use a higher refresh rate and a more appropriate "Mode Line" setting for your monitor – particularly if you are an avid games player or find that you are experiencing a "flicker". There are several sites which will generate these settings when provided with a little information about your equipment.

Your distribution will probably favour one of the two leading graphical session environments – GNOME or KDE. Each has its merits and flaws and is under constant development. I choose GNOME over KDE for my everyday work however many people tell me that KDE is their preference or that they simply don't bother with any graphics at all. The work currently being undertaken by HelixCode to produce an easy to install and configure GNOME is commendable and it is worth looking at their efforts (**www.helixcode.com**) when choosing your graphical environment.

Both GNOME and KDE come with a wealth of applications including word processors, calendars, spreadsheets, e-mail clients, multimedia tools, graphics manipulation tools, and so on. I tend to use GNOME, Netscape and the StarOffice Office suite, in addition to the programming and other tools that I use. Some people also find the work being done by the WINE project (**www.winehq.com**), offering support for windows applications on Linux, to be immensely useful.

Once you have a working environment you will almost certainly want to play with the other kit that surrounds your computer. Several common problems occur when trying to use USB, IrDA, PCMCIA and modem devices.

Although USB support has been "backported" to the current production kernel series (the core of the operating system) and is better than Window NT's, for example, it has a way to go before it is easy to plug 'n' play such devices.

PCMCIA support is present in most distributions however "official" support only recently entered the development kernel series and so venders must apply various custom "patches" to provide support for these devices, with varying degrees of success. The reader is strongly encouraged to consult the HOWTOs, documentation that came with their distribution, refer to the vender's Web site and to check out **www.linuxdoc.org** for the latest info.

The next stumbling block – getting connected. A common problem is for users to be stuck with certain internal modems, often referred to as "Win Modems". These extremely poor devices are very limited in functionality with most of their features being provided

You can contact Jon Masters via
jonathan@easypenguin.co.uk

through software.

They are favoured by PC builders due to their low cost, however the manufacturers are not keen to provide information about the hardware for the creation of Linux drivers – my advice would be to buy a decent external modem as it will be well worth it in the end. ISDN support is quite advanced and many cards should work fine – check your venders' hardware database for details.

Many users will start off using the configuration tools provided by their vender to get an Internet connection. Usually, this will consist of a graphical dial-up agent, often visually similar to the Windows connection tools, however with a bit of effort one can go further and create quite sophisticated automated dial-up scripts – check out the dial-up HOWTOs for tips and suggestions here.

Most distributions will ship with Netscape for Web browsing/email and, while you can simply enter you ISP details in Netscape, configuring a local mail subsystem to handle e-mail for all of the computers in your house or office as well as to provide seamless service from a whole host of different applications is preferable in many cases.

If Internet connectivity for the whole home or office is required, this is no problem as Linux can easily handle NAPT (Network Address Port Translation – otherwise known as IP Masquerading) to allow all of the machines to share a single connection. This can be quite complex so I would recommend reading all of the available documentation and consulting your local user group for further advice. I have a fair number of machines all continuously connected at home over a single connection provided by a Linux firewall/router.

Another popular problem occurs when experimenting with multimedia under Linux. While many devices are supported, it will take a little effort to get there. Sound cards are usually auto-detected these days and support can only improve – particularly with the shift from the OSS (Open Sound System) to ALSA (Advanced Linux Sound Architecture) in the coming year. A number of TV Tuners are supported under Linux. I have an All In Wonder 128 graphics card which boasts such features as a built-in TV Tuner and accelerated 3D functionality.

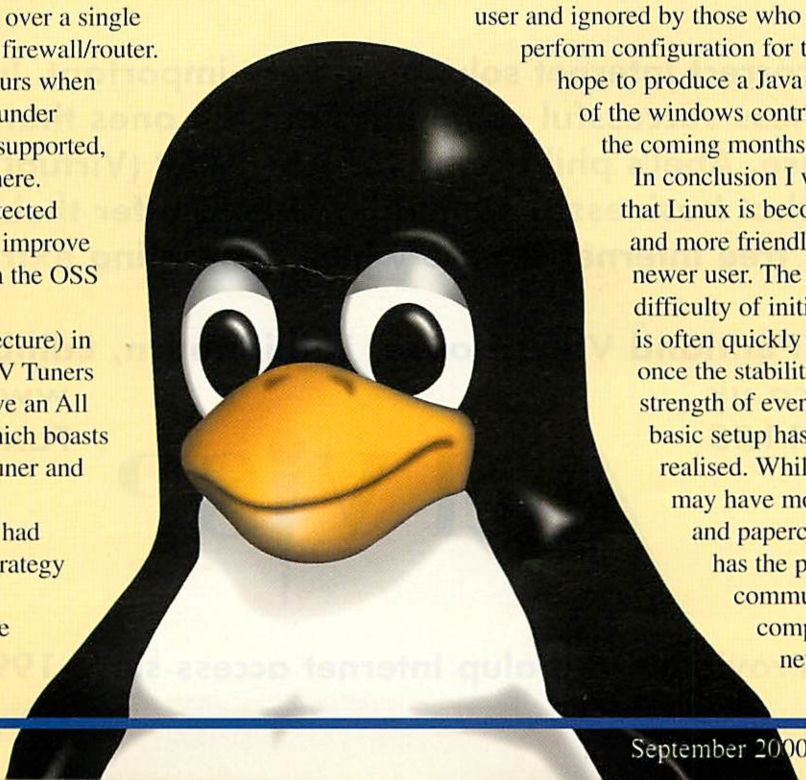
Companies such as ATI have had quite significant shifts in their strategy towards Linux over the last six months and are now (after a little coaxing) providing sufficient information (and funding) about their products for projects such as GATOS to create software for them. CD-RW support is quite advanced and any recent (MMC-3 compliant) device should function properly – see the cdrecord documentation for details.

Where would we be without movie entertainment? While there are several products available to bring video to Linux (such as realvideo and xanim), support for technologies such as DVD has been rather limited until recently. A company famous for its Windows "WinDVD" player has recently completed a port to Linux and "LinDVD" should be available shortly (**www.intervideo.com**).

A significant majority of popular printers are supported now and, while Hewlett Packard printers are arguably the best supported devices, your equipment should function fine. As far as scanning goes, the SANE project was established to offer scanner support under Linux. It now covers a wide variety of scanners however there are some notable omissions in there so if you have not yet got a scanner, shop carefully! Of course with a printer, scanner and a modem, you may wish to send some faxes. This is not a major problem – the fax and voicemail (vgetty+sendfax) software that came with your distribution will provide this.

Many efforts are underway to make Linux more accessible to all. Several rather fancy configuration tools are being produced at the moment, including Webmin for online/remote admin and Linuxconf. The advantage of such tools is that they typically can be used by the newer user and ignored by those who wish to perform configuration for themselves. I hope to produce a Java based clone of the windows control panel in the coming months.

In conclusion I would say that Linux is becoming more and more friendly to the newer user. The perceived difficulty of initial installation is often quickly forgotten once the stability and strength of even the most basic setup has been realised. While Microsoft may have more wizards and paperclips, Linux has the power and community to take computing to a new level.



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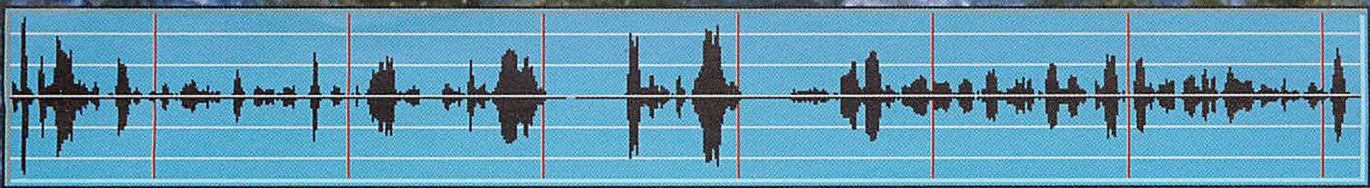
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On the inside

Matthew Sackman explains what goes on in your machine

One of the many virtues of RISC OS is that it is extremely easy to use: the Graphical User Interface (GUI) is very user-friendly, uncomplicated and consistent. However, like many of the virtues of RISC OS, it is a double-edged sword: users need not have any in-depth understanding of their computer while programmers must, and so the void between users and programmers is often very large. In this series I will explain how your computer goes about its daily business and perhaps shrink that void a little.

Applications (or programs) seldom consist of a single file. Whenever you double-click on an application (for example *OvPro*), you are actually double-clicking on a directory, but a special type of directory as it has its own icon and it runs when you double-click, instead of opening like normal directories. The reason this happens is because it has a exclamation mark (!) at the start of the name of the directory.

If you create a new directory called *!MyDir*, using the "New directory" option on the Filer menu, you will notice it has a special icon and double-clicking on it will cause an error message to be generated. By Shift+double-clicking instead, you can get inside any application-directory. You will then see a directory full of files (but not if you opened the *!MyDir* you just created) and these files collectively make up the application (Figure I).

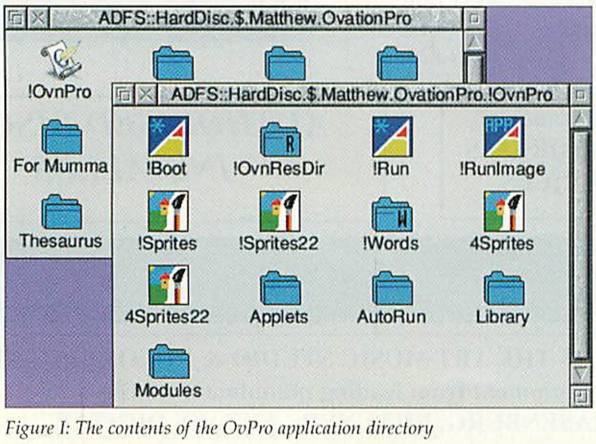


Figure I: The contents of the OvPro application directory

Across most applications there are a set of common files, again preceded with a exclamation mark (!), and these have special importance:

The *!Boot* file is run when the application is first seen by the Filer. And this file is usually of a certain 'type' that instructs the computer to perform some operations in the background. Thus, when the directory containing the application-directory is first opened, the application is "booted" causing its *!Boot* file to be run. The *!Boot* file itself doesn't usually do much – it will set up a few things and cause the computer to load a few sprites into its memory, but that's about it.

So if *!Boot* is run when the application is booted, you can guess that the *!Run* file is run when the application is run (usually double-clicked) – when you double-click on *!OvPro*, you are actually running the *!Run* file inside the application-directory. So, if you have a directory open and double-click on a *!Run* file in it you are doing the same thing and the application will load and run as normal.

When you created *!MyDir*, and double-clicked on it, you got an error message saying that the !Run file couldn't be found. This is because RISC OS was treating the directory as an application-directory and was trying to find the !Run file which wasn't there and so it popped up an error.

Running an application is more complex than you might think. Like the *!Boot* file, the *!Run* file simply sets a few things up: it might ensure that certain modules are loaded (which I'll cover at a later time) and it may cause some other sprites to be loaded. Only when these are done will *!Run* cause *!RunImage* to be loaded, and the program proper will begin.

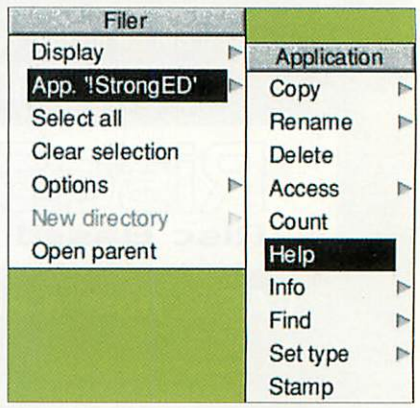


Figure II: The Help entry selectable because of the presence of the !Help file

Most programs start by going through a set up procedure, often including adding an icon to the iconbar, and then they enter a 'loop' of waiting for you to do something, to which it can respond.

I keep mentioning "sprites": a sprite is a graphical image. Sprite-files can contain one or more sprites and normally load into the *!Paint* program, although many other programs can display them. In this case loading a sprite-file consists of copying the sprites (all the sprites within the sprite-file) into the memory of the computer.

This is not the same as editing the Sprite-file in *!Paint*: this is the difference between running and loading – an application will ask the OS to load the sprites into memory for future use, while double-clicking on a sprite-file runs it which causes *!Paint* to first be loaded and run, and then the sprite-file is loaded into it.

Back in our application directory you will probably see two or more Sprite-files, one named *!Sprites* and one *!Sprites22*. Both will contain the same sprites, but *!Sprites* will contain them in a low quality screen mode, while *!Sprites22* contains them in a higher quality screen mode. When the *!Boot* file or the *!Run* file requests that these sprites are loaded into memory, the OS automatically loads

the correct sprite file depending on the current screen mode.

If you double-click on a sprite-file you will usually see at least two, usually more, sprites. One will have the name of the application in lower case (for example, *!ovpro*), sprites can only have lower-case names. It is this sprite that is used as the icon for the application and is displayed in the parent directory.

If an application doesn't have a *!Boot* file RISC OS automatically looks for and loads a *!Sprite* file if it's there.

There should also be a small version of the application icon, named *sm!ovpro*. This is the icon used when you are displaying the directory windows with small icons or in list form. If this file is not there RISC OS uses the large icon at half size. You may also see a sprite named something like 'file_b27'. This is the icon for files which have a filetype of 'b27'.

An application directory may contain a *!Help* file, if it does the Help entry on the Filer menu becomes selectable (Figure II), clicking on it runs the *!Help* file. The *!Help* file itself can be a variety of 'types': often it is just a text file which is loaded into a program like *!Edit*. Or it could be similar to *!Boot* and *!Run* and cause a separate manual-reader to be loaded.

Filetypes

Back in the days of the BBC Micro, each file was given a load and an execution address. Nowadays this concept is outdated and instead you have a date-stamp for when the file was created or last saved, and a file type.

The filetype is a 3-digit hexadecimal number. Hexadecimal numbers are numbers where in each column you go from 0-15 in the same way that decimal numbers go from 0-9. For digits 10-15, A-F are used so A=10, B=11, C=12, D=13, E=14 and F=15. Thus 13 in hexadecimal (or hex) is actually 19 in decimal (one 16 and 3 units). Thus "b27" of the file_b27 from earlier is actually a number and is understood easily as such by the computer. Hence all files have a filetype which is, in fact, a number in the range of 0 to FFF hex (or 0 to 4096 decimal).

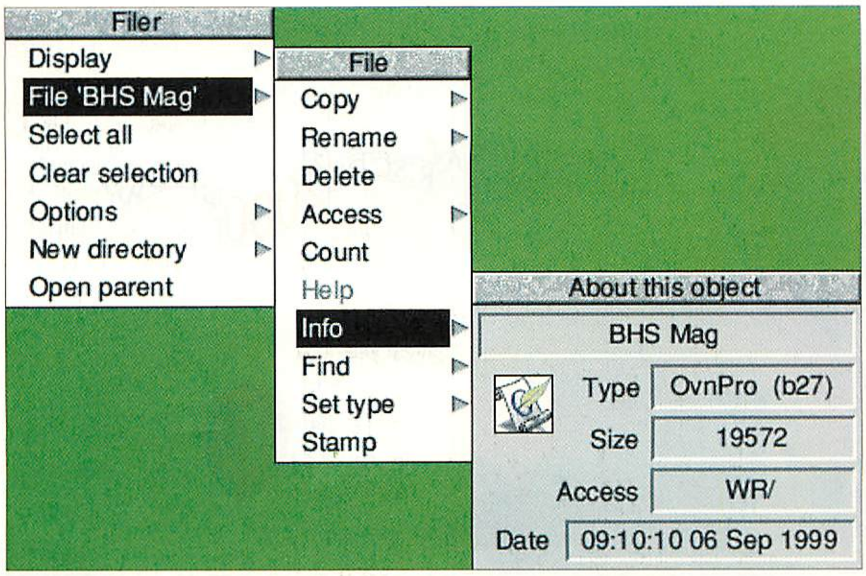


Figure III: The Info panel showing the filetype number and name

When an application is booted, it will register with RISC OS the filetypes for which it is responsible and what type of action it can perform on them. For example, *OvationPro* registers the file type b27 and declares that it will deal with files of type b27 being run (double clicked) and printed (dragged to the *Printer* icon). Hence when any of these events take place, the OS first looks at the filetype of the file in question and then looks at a table it keeps which cross references the various file types with the actions that can be performed on it and the applications that are responsible for it.

Thus it works out which application is registered as being capable of dealing with the file and checks to see whether that application is already running. If it is RISC OS sends a message to the application to tell it that there is a file that needs dealing with and the application takes. If the application is not loaded RISC OS will cause it to be loaded from disk and run, and then it informs the application of the file to be dealt with.

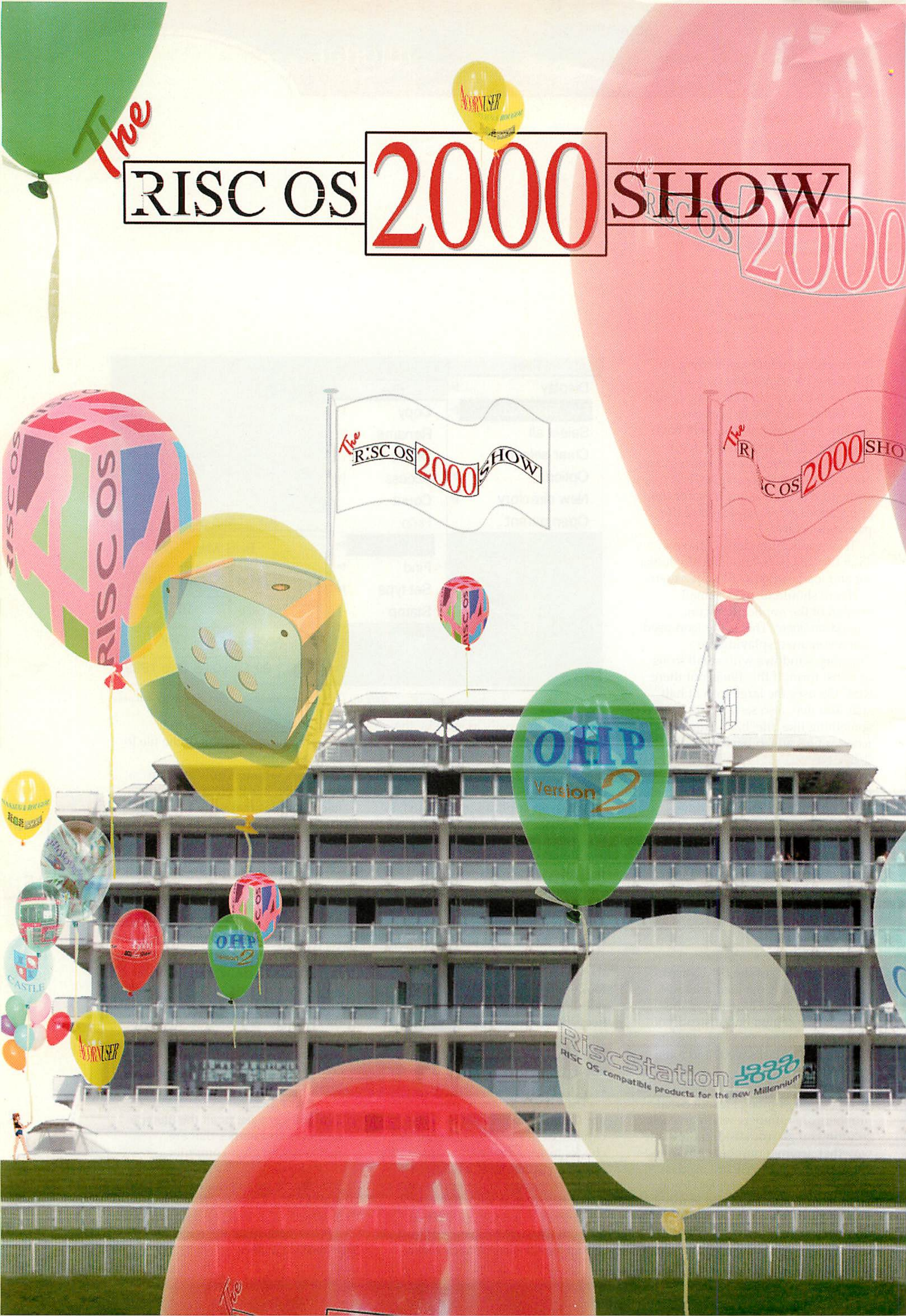
This is why it is only after an application has been 'seen' by the Filer that files that were created by that application can be loaded: it is in the *!Boot* file that the application registers the file types it is responsible for and also loads the sprite for that filetype.

One other piece of information that the application will provide is a textual equivalent for the filetype; the number on its own means very little to us mortals so a textual name is given. If you bring up the Filer menu of any file and go into the Info panel, then you can see both the filetype number and name (Figure III). Additionally, if you bring up a command window (Control+F12) and type:

```
Show File$Type*
```

You will get a list of all the filetype numbers and names that are registered on your computer.

Next month we will take a look at how multitasking works and how it is implemented in RISC OS and how the different parts of the OS communicate between each other.


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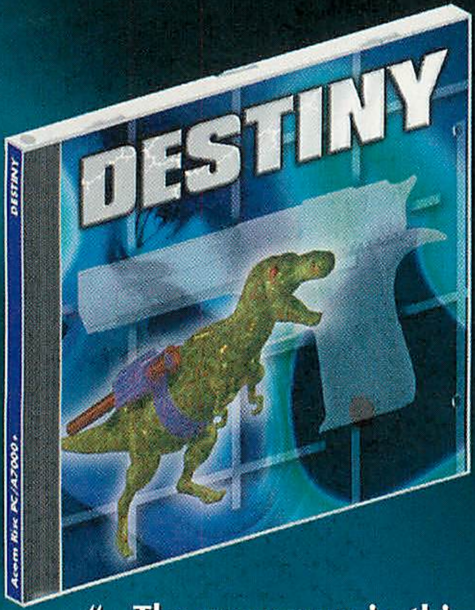
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RISC OS Rambles

Mike Cook investigates the fungi

No rambling again this month, let's get straight down to it with a bit of feedback from Christopher Raison:

Q **"Thanks to everyone who has given advice on my DOSMap problems. Yes, if I set the file type to DOS (or 0, which saves a couple of keystokes) the icons magically change to match the extension.**

"But I still have to do this a directory at a time – surely it wouldn't be too hard to patch DOSFS to ignore Byte 13 and use the DOS extension regardless? I suppose it would be harder to get it to do something sensible with un-extensioned files, and with *SetType commands.

"In the ARM, it also says that 'When transferring a file to DOS, the RISC OS file type is checked against any that have been registered using *DOSMap; if there is a match the DOS file is given the corresponding filename extension' (2-327). I haven't noticed this happening on my system either – am I missing something?"

A Not really, it won't work for me either. I thought I heard that this was one of the things in the OS that didn't work properly.

Next we have Steve Tailor:

Q **"In the July 2000 *Acorn User* – Rambles Simon Anthony wrote regarding a printing problem and his icon bar. My machine is a Risc PC, RISC OS 4.02, StrongARM233 (ex 710) and 64+2Mb. There is an APDL 16-bit AIDE card with the original hard disc (master) and an LS120 drive (slave) connected to the original AIDE slot. The CD is connected to the APDL IDE card.**

"Before I put in the new OS and 223 processor the hard disc and CD were fitted to the APDL card and it booted from that, the LS120 was on the motherboard IDE slot. All worked well apart from the iconbar flashing at me about once every 8 seconds. This only happened with an ADFS disc in the LS120 drive. If the drive was empty or had a DOS disc in there was no flashing.

"With the machine as it is now the flashing remains, there appears nothing wrong. I was wondering if this may give some help regarding the problem? At the end of your reply to Simon you mentioned 'Usage'. It is by Ran Mokady dated 24th May 1990 version 1.00. It was off an Acorn Computing disc.

"Also, has any light of a USB port upgrade for the Risc PC come your way? I would like to get one for my scanner."

A As far as I know Microdigital are the only company that have even talked about USB and they apparently had some prototype podules – so they could do some testing before implementing USB on the Mico. There real potential for some enterprising person here but the problem as always would be driver software for the actual devices you want to connect up.

John Hardson ran into a minor bit of difficulty while trying to make on of my projects:

Q **"I am currently constructing your SPDIF optical converter featured in the June issue of *Acorn User*. I went into Maplins and they told me they didn't sell the 74HCT14 chip but had instead the 74HC14, will this do?"**

A Yes in this case it will not give you any trouble. In general the letters in the middle of a 74xxx logic chip indicate something about the way it is fabricated and its performance. In this case the HC stands for "high speed CMOS" and the T part indicates that TTL input voltage thresholds are used. In this project a potentiometer sets the DC bias on the input and so when this is adjusted to operate you will compensate for the slight difference in thresholds between the two devices.

Note that the "high speed" part means only high for a CMOS device which in general have lower power, higher input impedance and slower speeds that traditional TTL (Transistor Transistor Logic). There are a bewildering array of middle letters this logic series can poses, in

the Texas Instruments catalogue alone there are 32 different varieties of logic, however most of the time it doesn't matter, it's only when you get into very high speed, low power or low voltage that it makes a difference.

You might remember from the July issue Ian McGee wanting to know about a laser LARP and I tracked this down to a Live Action Role Play module, the types that are used in laser gunfights.

Well it turns out that wasn't what he wanted at all, in fact there was a bit of finger trouble on his keyboard and what he was after was a laser harp. Altogether a different kettle of electrons.

Q "Mike, for the laser harp/sequencer project I am organising to build, how would you break the project down and what steps would you take to design and build the project. I have looked at your articles, Run The RISC 1996 (December RTR21 – sound square) and body build articles 1994 BB137(special 94) touch screen.

"These seem close to what I want, however I would like a stand-alone system. Here is a rundown on exactly what I am trying to do. Build a laser harp that can not only produce MIDI notes, it will also be able to record these notes and allow you to play back these notes as a loop, which you can then add on top of this loop.

"I want to be able to store and several loops to together in a song format. I know this is a big project so I was hoping to build the project in modular form, starting with easy steps and working toward the harder steps.

"My Acorn knowledge is almost non existent. Would the code for your sound square/laser harp be able to run on the BBC Micro's?

"Before using a PIC I feel it would be easier to use a setup that already works. As well it seems easier to understand the code concepts when they are written in Basic. Would an Acorn be suitable for the Net, or do you need an Acorn model with a dual processor, Acorn/PC?

A Let's answer the last first the old BBC computer, that is those with a 6502 processor in them, are no use on the Internet, you need an Archimedes or later, one with a RISC processor in it. Even then the early Archimedes could only be upgraded to a maximum of 4Mb, this is okay for e-mail and newsgroups but it's very difficult to surf the Web with so little memory.

Moving on to the sound square project you're referring to: As the code for the the two articles of mine were written for the RISC OS operating system it won't work with the earlier 8-bit machine anyway.

Your harp project is a little ambitious for a stand-alone project running from a simple PIC. It is fine being able to produce notes but the problem with getting it to record MIDI notes is that there is not enough memory in the PIC chip to do this, there are only 128 bytes of memory and you need some of these for registers leaving about 96 bytes free.

You would need three bytes to store a *note on* MIDI message and another three for a *note off*. Therefore, you can only store about 16 notes in a loop. You could try to store this more efficiently by, say, not storing any velocity information or channel information but you are still very short of memory. If you want to do that you are much better off using a computer and not trying to make it stand-alone.

You could get the your BBC Micro to do this but there is nothing in the way of any MIDI software (or hardware) to help you. For a stand-alone system you also have the problem of a "user interface" that is how is the user to command it to go into various modes and how does the harp feed back what mode it is in, again all these things are best left to a computer.

It is possible to use external memory on a PIC but not the small PIC16C84, you need a more powerful one, then you could use some static RAM or even I2C memory. However, I would recommend trying to walk before flying.

I would break down the project down into more manageable steps by first getting the PIC to send MIDI in response to a contact closure, see my recent MIDI drums project for a help there. Once that is working get one of the sensors to respond to the breaking of a beam from an LED that is on all the time. Then go for multiple LEDs being scanned in one dimension only, feeding into multiple sensors. Then go for the two dimensional version. Then get the PIC to sort these into MIDI notes.

Finally arrange some other PIC inputs to select MIDI channels and others to select the key signature of the notes produced. I am working on a Phatboy-like MIDI controller using a more powerful PIC that you might be interested in when it is finished.

Undaunted Ian replied:

Q "I am interested in your Phatboy project, I understand that the real one handles loops, WAV files and samples and turns them into MIDI data. Will yours do the same?"

A My Phatboy doesn't do anything with loops or samples, it simply (ha!) inserts continuous controller (cc) information into a MIDI stream. I think you might be confusing MIDI data and sample data. While you can use MIDI to trigger samples the MIDI stream contains no information about what a sound sounds like only stuff like "play sound number 7 with a volume of 89".

You can't convert from a microphone or sound sample into MIDI with any hardware or software, it can't be done, the waveforms are too complex. I have see demos of software that is supposed to do this for simple sounds (like a flute) but it doesn't work very well.

Contacting AU

Mike Cook:
rambles@acornuser.com

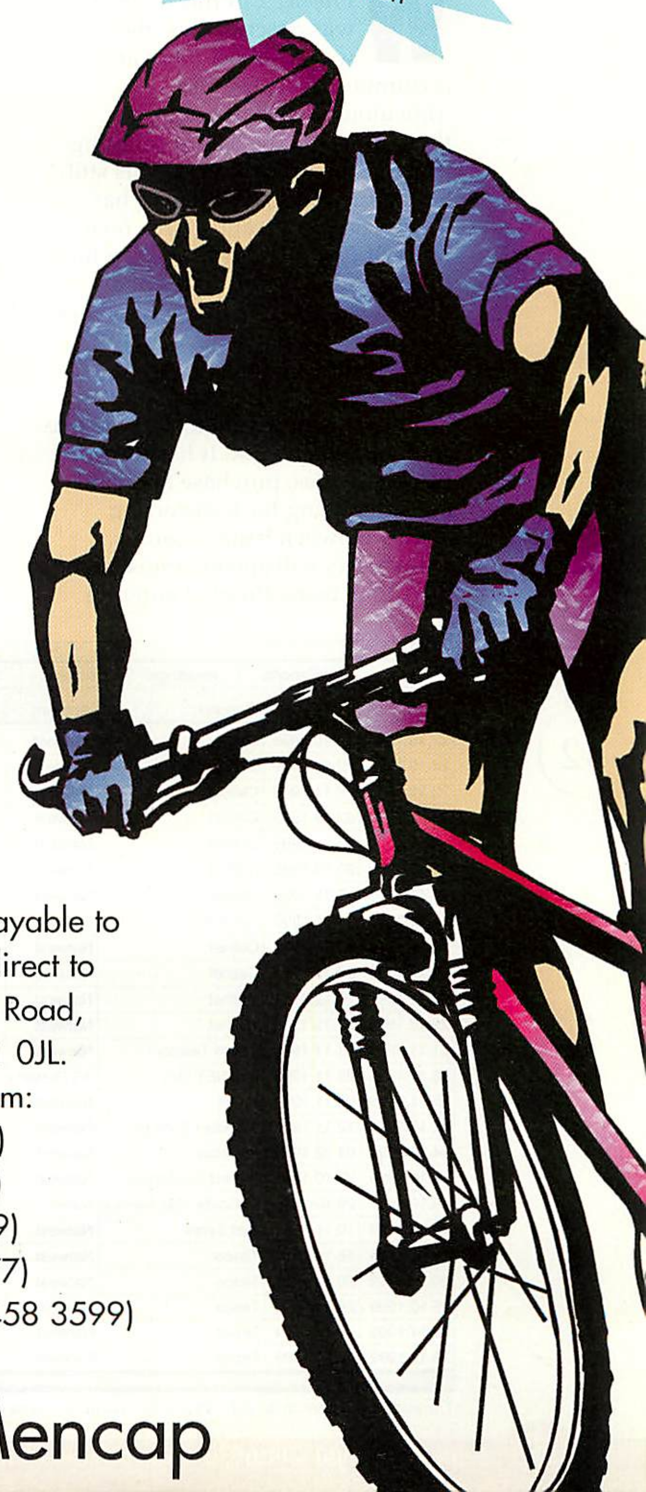
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On behalf of Mencap

It's what

When *Acorn User* reviewed *Prophet* 2 in July 1995, it was described as 'the world's most innovative accounting package' and 'ridiculously easy to use'. We thought it was the best accounting package on any platform. This still holds true today, but *Prophet* has moved on significantly. This review looks at *Prophet 3 Professional*, which I use to produce the books of a limited company with a turnover of £150,000. It is, however, equally suitable for sole traders and partnerships.

Prophet is designed to operate like a paper ledger book. It has three ledgers – sales, purchase and bank, the latter being for transferring money between bank accounts. Many users will spend almost all of their time using Prophet entering transactions into the sales and purchase ledgers. Typing in transactions is just like writing them on a sheet of paper, one after another down the page.

The difference between this and paper is that data entry is much faster (for example, if you leave the date empty, it will enter the previous entry's date) and all the adding up is done automatically. Not only does this save hours adding up on a calculator, it eliminates the possibility of adding up columns wrongly.

Every entry can be assigned under a 'heading', which lets users categorise transactions, and optionally under a sub-category. Thus a payment to Royal and Sun Alliance can be categorised under 'insurance' and the sub-category 'vehicle'. The minor limitation is that *Prophet* won't let you apportion part of a transaction to one heading and the rest to another – but most people will never want this anyway. Job costing (where you assign a purchase or sale to a particular project) isn't officially supported, but it can be done via the ledger's Comments field, and a report can be produced showing how much has been spent on each job.

The significance of *Prophet*'s design cannot be overestimated. Normally, accounts software makes users enter transactions into dialogue boxes, which make it very difficult to see what is going on. Even worse, some prevent users from correcting mistakes later on. *Prophet*, instead, works just like a piece of paper.

With paper, you can simply rub out an error, and similarly *Prophet* lets you alter any mistake at any point. Its paper-like design makes it the clearest package on the market. Moreover, *Prophet* has been designed with keyboard shortcuts in mind. It's a right pain having to reach for the mouse every thirty seconds when you're normally entering data from the keyboard, and *Prophet* lets the user do absolutely everything using the keyboard.

Purchase Ledger : Entry 247

Find | Reports | Headings | Accounts | Suppliers | Main Menu | Calculator | P | R | U | p | C | S

Date	Tax Point	Supplier	Account	Referer	Total	VAT	VAT	Paid	Heading	Commer	Status
22.10.1999	22.10.1999	Cellnet	Natwest	P095	39.61	A	5.90	39.61	Phone:Site		Paid
22.10.1999	22.10.1999	Cellnet	Natwest	P096	33.32	A	4.96	33.32	Phone:Site		Paid
23.11.1999	23.11.1999	Cellnet	Natwest	P097	12.50	A	1.86	12.50	Phone:Site		Paid
23.11.1999	23.11.1999	Cellnet	Natwest	P098	29.86	A	4.45	29.86	Phone:Site		Paid
23.11.1999	23.11.1999	Cellnet	Natwest	P099	10.45	A	1.56	10.45	Phone:Site		Paid
23.10.1999	23.10.1999	Cellnet	Natwest	P100	-9.87	A	-1.47	-9.87	Phone:Site		Paid
16.11.1999	16.11.1999	Cellnet	Natwest	P101	-2.19	A	-0.33	-2.19	Phone:Site		Paid
16.11.1999	16.11.1999	Cellnet	Natwest	P102	-0.27	A	-0.04	-0.27	Phone:Site		Paid
16.11.1999	16.11.1999	Cellnet	Natwest	P103	-17.60	A	-2.62	-17.60	Phone:Site		Paid
22.12.1999	22.12.1999	Cellnet	Natwest	P104	12.50	A	1.86	12.50	Phone:Site		Paid
22.12.1999	22.12.1999	Cellnet	Natwest	P105	12.77	A	1.90	12.77	Phone:Site		Paid
22.12.1999	22.12.1999	Cellnet	Natwest	P106	27.51	A	4.10	27.51	Phone:Site		Paid
21.11.1999	21.11.1999	British Telecom	Natwest	P107	106.49	A	15.48	106.49	Phone:A		Paid
26.11.1999	26.11.1999	UK2NET Ltd	AS Persona	P108	61.08	A	9.10	61.08	Advertising:A		Paid
05.11.1999	05.11.1999	U-Net	Natwest	P109	131.60	A	19.60	131.60	Advertising:A		Paid
12.11.1999	12.11.1999	McMillan Scott plc	Natwest	P110	293.75	A	43.75	293.75	Advertising:A		Paid
04.12.1999	04.12.1999	Bemrose	Natwest	P111	365.84	A	54.49	365.84	Advertising:A		Paid
29.10.1999	29.10.1999	Perfect Scafolding	Natwest	P112	129.25	A	19.25	129.25	Sub contractors:		Paid
29.10.1999	29.10.1999	P. Goldie Gas Service	Natwest	P113	70.50	A	10.50	70.50	Sub contractors:		Paid
10.11.1999	10.11.1999	Just Tyres	Natwest	P114	44.99	A	6.70	44.99	Car costs:A		Paid
16.10.1999	16.10.1999	Tesco	Natwest	P115	28.61	A	4.26	28.61	Fuel:Diesel		Paid
20.10.1999	20.10.1999	Tesco	Natwest	P116	28.87	A	4.30	28.87	Fuel:Diesel		Paid
25.10.1999	25.10.1999	Tesco	Natwest	P117	30.71	A	4.57	30.71	Fuel:Diesel		Paid
16.11.1999	16.11.1999	Tesco	Natwest	P118	31.35	A	4.67	31.35	Fuel:Diesel		Paid
26.11.1999	26.11.1999	Tesco	Natwest	P119	30.98	A	4.61	30.98	Fuel:Diesel		Paid

The purchase ledger in action – inserting new data is very easy

Databases

Each of *Prophet*'s three ledgers also has a integrated database

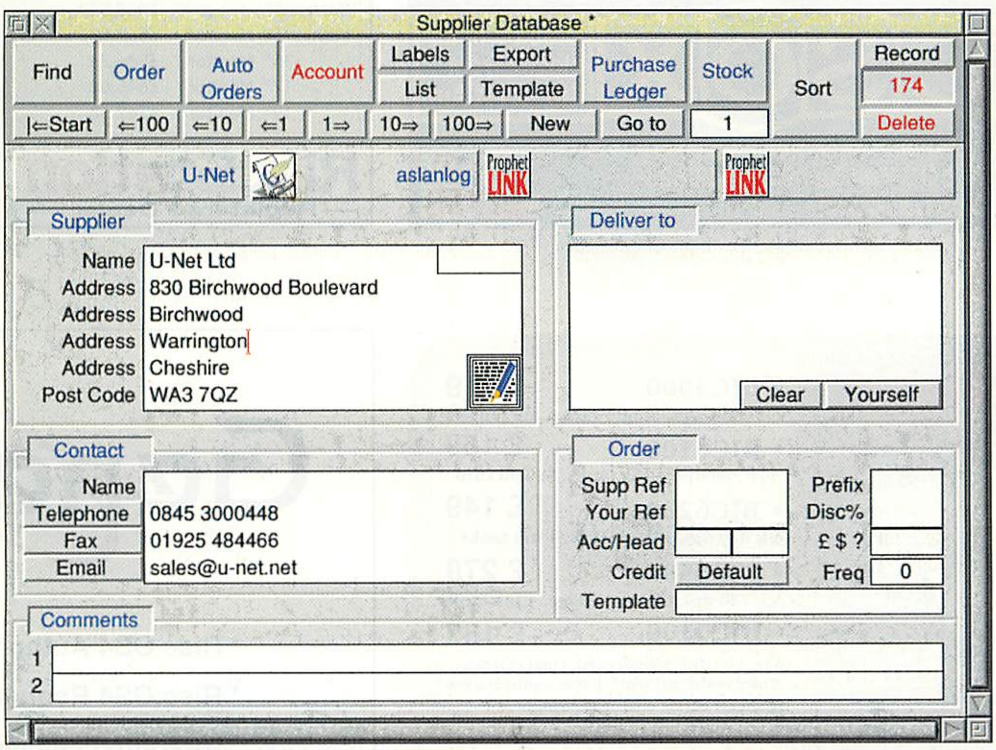
counts

Alex Singleton gets down to business with Prophet 3 Professional

associated with it – for suppliers, customers and banks. This means, for example, when you want to enter in a purchase from 'Tau Press' into the purchase ledger, you need only enter 'Tau' and let *Prophet* look up the full name.

The supplier and customer databases have a comprehensive set of fields including separate invoice and delivery addresses, telephone, fax and e-mail. Customer-specific credit and discount terms can be entered. Telephone numbers can be auto-dialled through a modem, and one click over the e-mail field opens up your e-mail software with the address ready in the 'To' field of a blank e-mail.

Prophet also allows the e-mail field to be exported so you can do a bulk e-mail of customers. Up to four files and directories can be linked to each record – useful for speedy access to correspondence. With *Prophet* there may be little need for buying a database.



The supplier database integrates seamlessly with the purchase ledger

The printing of invoices and credit notes are catered for, but instead of entering them directly into the sales ledger, they go into another window, which looks a little like an on-screen invoice. Then when you print it, the appropriate details are automatically added to the ledger. Invoices are saved in a separate file and can be brought back and altered.

Prophet also copes admirably with quotations and proforma invoices. The interesting feature is that it has basic desktop publishing facilities built-in. While not as sophisticated as a dedicated package like Ovation Pro, it does the job at least as good any of the PC packages I have used, which often have a fixed invoice design.

Prophet can automatically produce statements for sending to customers with overdue amounts. These, along with invoices and purchase orders, can now be exported as text files for sending as e-mails. Indeed, e-mailed invoices are accepted as valid by Customs and Excise – although I must say as someone on the receiving end it's irksome having to print them out. If you are printing out statements, *Prophet* now lets you state which record number to start from, which is handy if your printer dies halfway through.

Prophet lets you make payments on account, and any item may be unpaid, part-paid, fully paid or reconciled. In the ledgers, *Prophet* can colour code each transaction depending on its payment status, making it easy, for example, to pick up on any items that still need paying – I was impressed.

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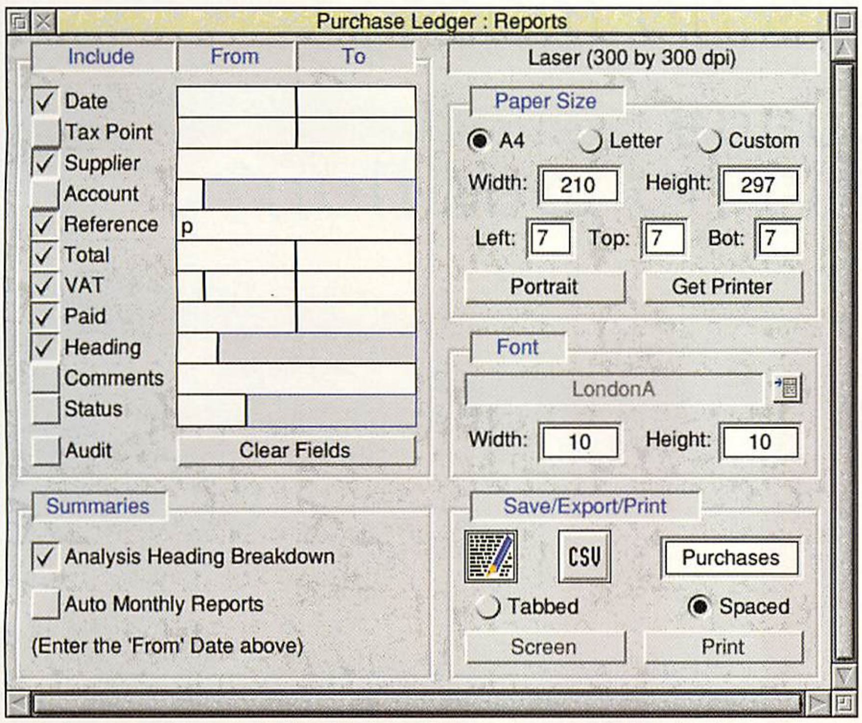
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Prophet's reports are fully customisable and can be output to the printer or to file, in various formats

Excise. The VAT handling is particularly good in that every transaction has two dates assigned to it – one an invoice date and the other a tax point date.

This means that an invoice entered late can both be entered into the correct VAT quarter while still be located by the invoice's actual date. *Prophet* lets users lock off entries before a particular tax point, thereby preventing invoices being posted to the wrong VAT quarter. If you try and enter an invoice from a previous VAT quarter, *Prophet* will warn you and then alter the tax point to the current quarter.

Almost anything can be exported, be it ledgers or databases. In our last review, we criticised the ledger reports because they could only be sorted into date order; this has been fixed. *Prophet* integrates a good label printer, which very usefully lets you set which label to start at. Importantly, *Prophet* will export its Accountants' Reports (the balance sheet and so on) as CSV, which can be transferred into a spreadsheet like Microsoft *Excel* on an accountant's PC.

While Prophet does not have an integrated payroll package, it can import data from Raspsoft's *HardCash* Business Software (tel 01274 671922, e-mail raspsoft@argonet.co.uk). I don't want to sound primitive, but I reckon businesses with only a handful of employees may find it easier to produce payroll by hand, save on the expense of a dedicated computer program, and just enter the details manually into *Prophet*. Nevertheless, this is a welcome feature.

Prophet 3+ introduces multi-currency support (adhering to the SSAP20 standard) and is Euro-ready. Foreign currency gains and losses are automatically accounted for in the package's Profit and Loss report.

There is also a stock database, which combined with *Prophet*'s point of sale facilities, make it suitable for the shop counter. Barcode-readers can be used, and are available from Acorn dealer Liquid Silicon (tel 01592 592265, e-mail liquid@cableinet. co.uk).

Conclusions

Last time we reviewed *Prophet*, we compared it to ACP's Enterprise Accounts. This was a package very similar to the popular PC package Sage Line 50, but sadly ACP is no longer trading. However, our conclusion nevertheless was that *Prophet* was the better of the two products.

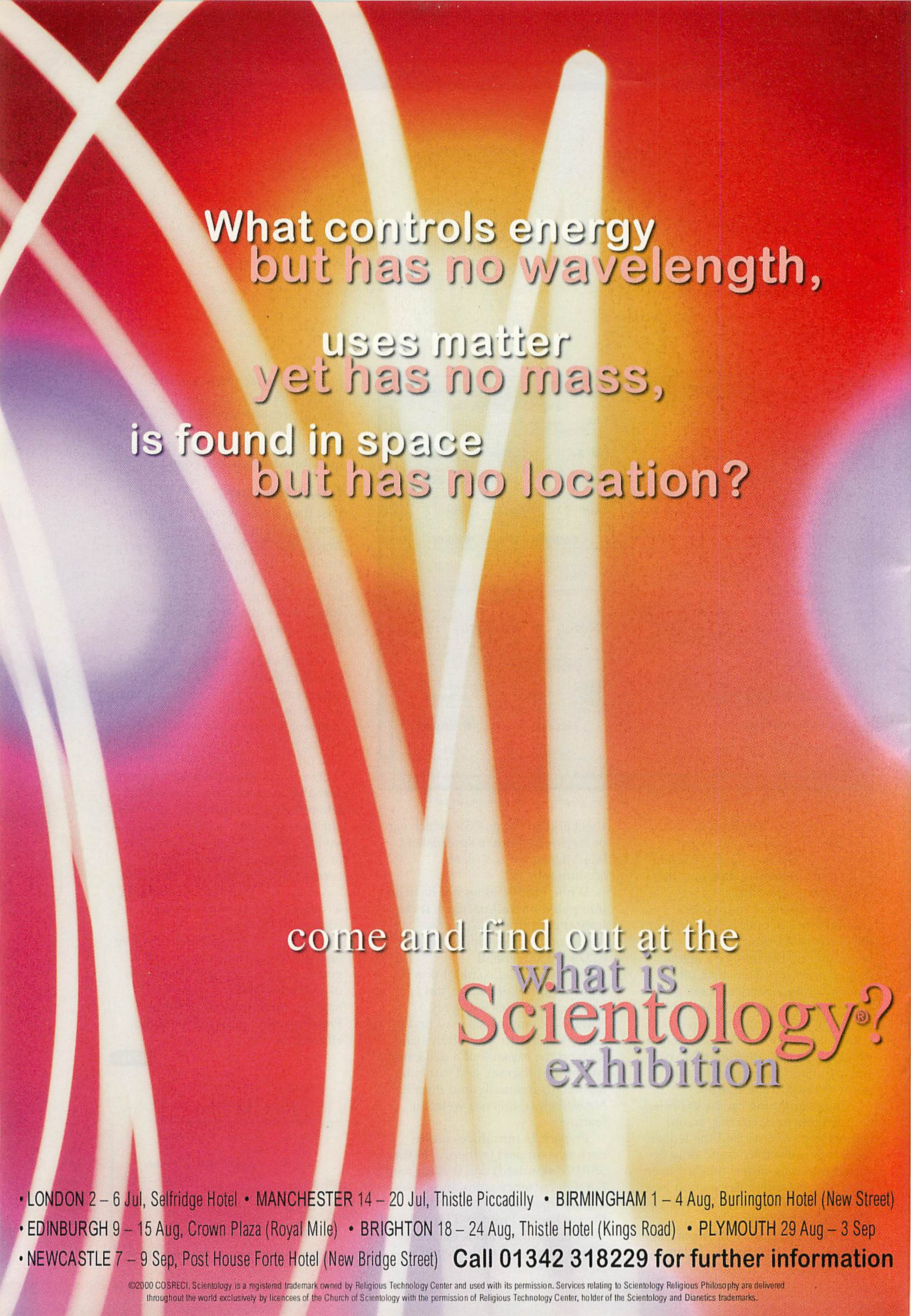
Perhaps key to *Prophet*'s appeal is that data entry is very quick. Yet the whole program has a responsive feel to it. Most accounts software continually access the hard disc, saving each entry as it is entered. The problem with this is that it makes the products run very slowly and also increases the chance that when there is, for example, a power cut, the computer is in the middle of saving a file. This also makes such programs much more at risk of corrupt files. *Prophet* does however have an auto-save facility, allowing a compromise between saving continually and speed.

I have been using *Prophet* for five years, and can honestly say it is a godsend. I have used PC products like QuickBooks and Sage, but I have no intention of swapping. *Prophet* simply does the job more efficiently.

END

Product details

Product:	Prophet 3 Professional
Price:	£200
Supplier:	Apricote Studios, 2 Purls Bridge Farm, Manea, Cambs PE15 0ND
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• Has anyone got an Irlam Instruments i16 sound sampler card they no longer need. Tel Richard 01623 794385 or ashbury@ukgateway.net (will reply but spasmodic) (Derbyshire)

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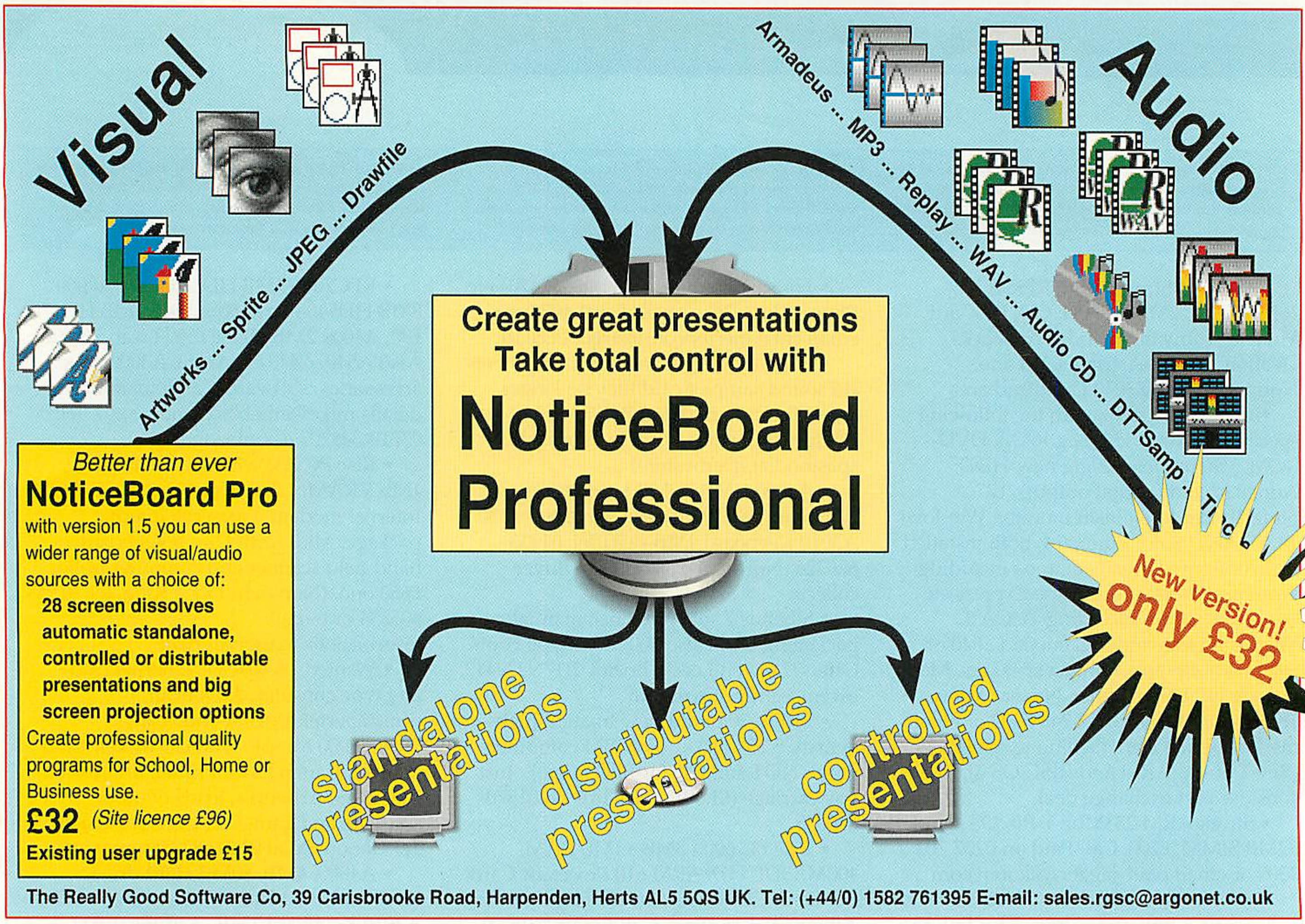
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Driving the Net

You can now access the European Computer Driving Licence (ECDL) online thanks to Northumberland College (01670 841 200) and learnOnline. For £250 there are seven modules, including tutor support and access to a virtual classroom with communication, interaction and learning tools.

The ECDL is the European benchmark IT qualification that establishes standards for everyone who uses a computer. Activity has concentrated initially on the further education community, but now this qualification is being increasingly promoted to the business community.

The scheme is run in the UK by the British Computer Society and the principle objectives are to raise the general level of competence in IT within the workforce and improve the productivity of employees who use IT at work.

Students receive full tutor support via e-mail and through the learnOnline communications suite which allows them to live-chat with tutors and peers as well as post up questions, assignments and answers whenever or wherever they want. The Trades Union Congress (TUC) and Online Publishing Education - who developed the learnOnline platform - have teamed up with Northumberland College to provide the ECDL Online using a virtual learning environment.

Northumberland College launched their ECDL last autumn and have decided to use learnOnline at this point to allow greater access to the ECDL materials, with the facility to constantly update resources and the ability to help coach and support any learners through the virtual classroom.

"We are very pleased to be offering the ECDL on learnOnline, in conjunction with the TUC, as it will provide greater support, interaction and communication for students on the ECDL course, helping them to learn about the fundamentals of computing using a modern and user-friendly learning environment", said Tim Capron, Principal of Northumberland College.

Electronic learning and testing

Granada Media has acquired NFER-NELSON for £19.65 million, in a move to create the UK's premier educational electronic testing business. This further strengthens its position to become a major player in the fast-growing international e-testing market.

The worldwide market for testing and assessment products is currently estimated at around £4 billion, predominantly in the USA but also in Australia, Europe and the Pacific Rim. Granada sees a major opportunity providing electronic services as the market is increasingly transferred online.

NFER–NELSON, is a joint venture between the National Foundation for Educational Research and the Thomson Corporation, and is the leading provider of test and assessment products for the UK education market, with its products widely used in over 75 per cent of UK schools. It will be integrated with Granada Learning, the UK market leader in providing interactive and online education services to both the school and home markets. These test and assessment products complement Granada Learning's existing 200 strong learning and revision product portfolio through Letts Educational.

Steve Morrison, Chief Executive of Granada Media, commented: "As we enter the broadband era and the demand for digital content grows, the electronic learning market represents a significant growth opportunity both in the UK and internationally. Granada Media is committed to building the UK's leading e-learning business and over the past two years we have made a number of acquisitions and created a number of partnerships in pursuit of that objective.

"NFER-NELSON's unique strengths and its UK brand leadership in testing and assessment make it an ideal addition to our rapidly growing group of e learning businesses. We will invest in the NFER-NELSON brand, content and skills and integrate it with Granada Learning to create the UK's premier online e-testing business."

In brief

Anglia update

Anglia Campus are currently working to provide more resources for QCA schemes of work. To help prioritise production, they would like to know what materials would be most useful for teachers. Let them know what you want by e-mailing support@angliaed.co.uk

On the content side, there's a major new unit on Nutrition for Key Stage 4 students. This takes an interactive look at everything from diet and the digestive system to the complex behaviour of enzymes http://home.angliacampus.com/login/sec/science/?nutrition

For Key Stage 3 *The Blitz* looks at the 1,000 bomber raids, and the atomic destruction of Hiroshima and Nagasaki are examined in *Aspects of World War II: AirRaids.* More video footage has been added to this popular history unit, courtesy of Anglia's partnership with ITN. See what they're up to at http://www.angliacampus.com/login/sec/history/?raids

For Year 1 teachers, there's a Measures unit packed with interactive activities this is a large unit looking at thickness, width, weight and time and is the first of four units on measurement at http://www.angliacampus.com/login/pri/maths/measures/index.htm

Staying with this age group is Teddy in the City who'll show you round the big city, but he's going to need your help if he's going to find his parked car, sort out his postcards, and discover the right shop.

Join Teddy in the City by visiting: http://www.angliacampus.com/login/pri/geog/bearcity/index.htm

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Medal Winners

Hone your mental arithmetic with a new series from Simon Hosler, Pam Turnbull puts it through its paces

An essential element to the Numeracy Strategy is the emphasis on mental maths, and this is one area which some children find difficult. Arguably as children follow the framework through Key Stage 1, this area will become a strength but, in the meantime, will these CD-ROMs help support them in the classroom?

Mental Maths Olympics is available for Year 4 and Year 5 and follow the NNS objectives in the areas of addition, subtraction, division and multiplication. Each CD-ROM contains seven maths challenges put in an Olympic setting. However, before you let the children loose, there are some essentials that teachers must put in place.

The *Teacher Control* button gives you access to five categories and this access can be restricted by ticking the Password Enabled box. There is only one password possible, which means that you'll never have to remember it, but also it means that if the children discover it you can't alter it.

I really liked the range of the teacher controls which are practical and well thought out. For instance, you can limit the time each child spends on the activities to one event, 5, 10, 15, 20 or 30 minutes. When they've had their session they'll be told so and encouraged to come back again. However, you can also set the program so that there is no time limit and children can play as long as they like.

The program defaults to 10 minutes but whatever time you select a child can choose activities in any order, but the faster and more carefully they work the more events they can take part in.

I also liked the way you can *Set Group Details* which could be a whole class or a table in the class. All very straightforward to add, edit and delete. Within these groups you can then add children's names. Once the names are in you'll see that there are three levels listed alongside each child's name. This defaults to Level 2, but you can set it for individual children and this affects the range and difficulty of the sums encountered during the activities.

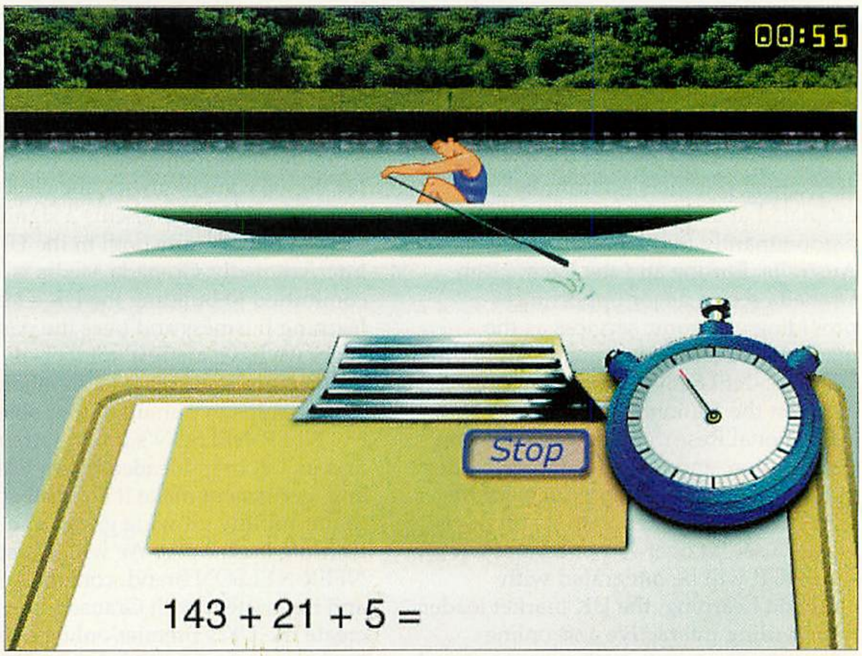
However, the most comprehensive section is *Setting Strategies*. There are four options available: addition and subtraction, division and multiplication, or set to random or indeed to no strategy at all but calling up random mental maths questions.

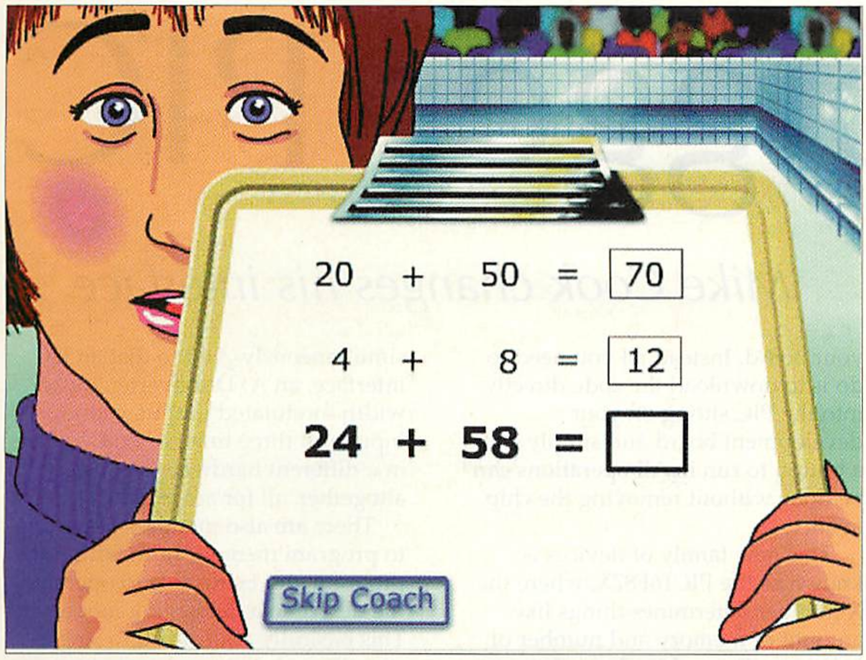
Choosing the first two options reveals a list of strategies which can be de-selected to make it fit with your learning objectives for a particular lesson or series of lessons. If you wanted to look at the addition and subtraction strategies for Year 4 you'd be presented with 11 different strategies from finding the difference by counting on, to adding several numbers by starting with the largest number. For Year 5 some strategies are the same, while others are adapted such as adding pairs of numbers that make ten or hundred.

There are 10 similar strategies available for division and multiplication from doubling tens and unit separately to partitioning and using the distributive law. A nice touch is that these strategies are also available on a card as a teacher's aide memoire.

If you leave this section alone, each activity will be introduced by the coach and an animated worked example presented to the children. This can repeated if they need to clarify anything. These are very brief sessions which will remind children of the strategy and help them to consolidate what you have already done with them.

However, for children who have a range of methods at their fingertips the *Random Strategies* option asks children to use strategies you have chosen for the four operations. Whereas, the *No Strategies* option presents no coaching sequences and





12 random questions drawn from all the activities - at the required difficulty level. You can set the activities for every group by using the *Change group* button on the screen which is a nice touch. However, this section is especially useful for focusing on one particular strategy your class or an individual is having problems with.

Nicely presented and clear to use, the manual is very comprehensive, so set up is only a matter of minutes. And now it's time to let the children have a go ...

Start the competition button takes children to a clipboard where they can select their group and name. The next page of the clipboard presents the seven activities. Choose whichever one you want and up pops the event coach with his or her strategy for success. This can be repeated or skipped as needed. The event starts with the clipboard presenting the 12 sums. If you're correct the crowd will cheer and the coach will encourage. There is time to answer built into the program but the faster and more accurate you are the time and distance scores will be in your favour.

Some of the children found the questions changed too slowly once they have been answered and acknowledged by cheers or ahhhs and this they found frustrating. The reason is that each wrong answer receives a one-minute time penalty but this is only explained in the manual. Another niggle is that the event ends before the runner, swimmer and so on hasn't actually passed the finish line - the animation is nearly accurate but not quite.

While rowing, running and swimming are timed events, ski jumping, javelin and shot put are distance events. Here the object is launched skywards, correct and quick answers are rewarded by forward movement while sighs and a downward-moving projectile accompany an incorrect answer - a much more obvious penalty than with the timed events.

Archery is a target event and a little awkward to look at. You start with two arrows, with an extra arrow and points appearing for every four correct replies. When the sums have all been completed children have the chance to hit the target with the arrows they have gained. The bow sights can be moved by the mouse until they are on target and good shots mean more points for your clipboard.

After each event a scoreboard appears, and the details are then transferred to the clipboard which children can see and print out. Scores can also be recorded in an individual child's Logbook.

But how can a teacher tell how children are performing? There is not just one way of reporting here but four. You can view addition and subtraction or division and multiplication separately by best or latest results. Children's scores are them presented in a grid with labels showing which each column represents, identifying near doubles, for instance.

As children play they get the instant feedback for each event from the scoreboard and then a session result from their 'clipboard'. A results poster is available to help the children (and you) work out the type of medal each child has earned. And there is a training logbook for each child where they can record there scores and program with colour certificates to print out for each medal: copper, bronze, silver, gold and platinum. There are also blank certificates for you to add in *Highest Score, Best Rower* and so on.

A little more in the way of on-screen explanation on the scoring method would have been nice as would the facility for children to see which sums they have got wrong. I liked the way that the coaching sessions where short, but perhaps two or three alternative worked questions for those children who need to press repeat would be good for those unclear about the strategy.

Despite these very minor niggles this is an excellent tool, which the children enjoy and are enthusiastic about wanting to improve their scores and medal allocation. I ran it for two weeks then awarded the certificates, and then again later so that children could appreciate their progress.

END

Product details

Product:	Mental Maths Olympics Year 4/5
Ages:	Year 4 (8-9), Year 5 (9-10)
Price:	£49.95 each
Supplier:	Sherston Software, Angel House, Sherston, Malmesbury, Wiltshire SN16 0LH
Tel:	(+44/0) 1666 843200
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The bigger PIC

Mike Cook changes his interface

I have used the PIC16F84 microcontroller in many projects over the last few years and it is both convenient and cost effective. However, if you look in the Farnell catalogue you will see pages of related PIC devices. Most of these are UV erasable or OTP (one time programmable) devices but what marks the 84 device out is that it contains flash memory.

Flash memory is non-volatile read/write memory that can be treated like ROM (read-only memory), it can be instantly reprogrammed and does not require lengthy stretches on the sun bed. Now, Microchip have brought another family of devices with flash on board, the bonus is that they are programmable in circuit and don't require a high programming voltage.

This means, when developing something, you don't have to go through the cycle of removing the chip from your board, place it in the programmer, program it, remove it from the programmer, replace it in your board. Instead all you need to do is to download the code directly into the PIC sitting on your development board and simply click a button to run it. All operations can be done without removing the chip at all.

This new family of devices is known as the PIC16F87X, where the X number determines things like amount of memory and number of I/O pins. These chips have the same instruction set as the PIC16F 84, and what is more these new devices can now run at 20MHz, twice the speed of the fastest 84 chip, and there are lots more hardware goodies on board.

For example, there is a serial port, that means that you don't have to tie up the processor bit-banging data out of a port pin, you can simply store your message byte in a register and it gets sent. This also means you can send and receive serial data simultaneously. Add to that an I2C interface, an A/D converter, pulse width modulated output, capture input and three timers – and you are in a different hardware league altogether, all for around £6.50.

There are also methods of writing to program memory from within the program and being able to operate the device in a debugging mode. This basically allows you to single-step through your code or set break points and then examine the contents of the registers.

There are basically four devices in this family, two are in 28 pin packages and the other two in 40 (or greater) pin packages. Each one can be obtained in two speeds, 20MHz and 4MHz, but as the faster device is only a few pence more expensive it's not really worth going for the slower one. The 28-pin package devices, the 876 and 873, have fewer I/O port pins, 22 in total as well as having only 5 input channels on the 10-bit A/D.

In contrast the 40 pin devices, 874, 877, have 33 I/O port pins and 8 analogue input channels. Each of the two families have a member with small and large amounts of memory. The 873 and 874 have 4K of program memory, 192 bytes of register memory (RAM) and 128 bytes of EEPROM data memory. In contrast the 876 and 877 has 8K of program memory, 368 bytes for registers and 256 bytes of EEPROM data memory. In general I think I will only be using the low memory devices as 4K of machine code is enough for anyone to write.

You can get C compilers for these chips and that does eat up the memory. Occasionally however, the extra register memory might be

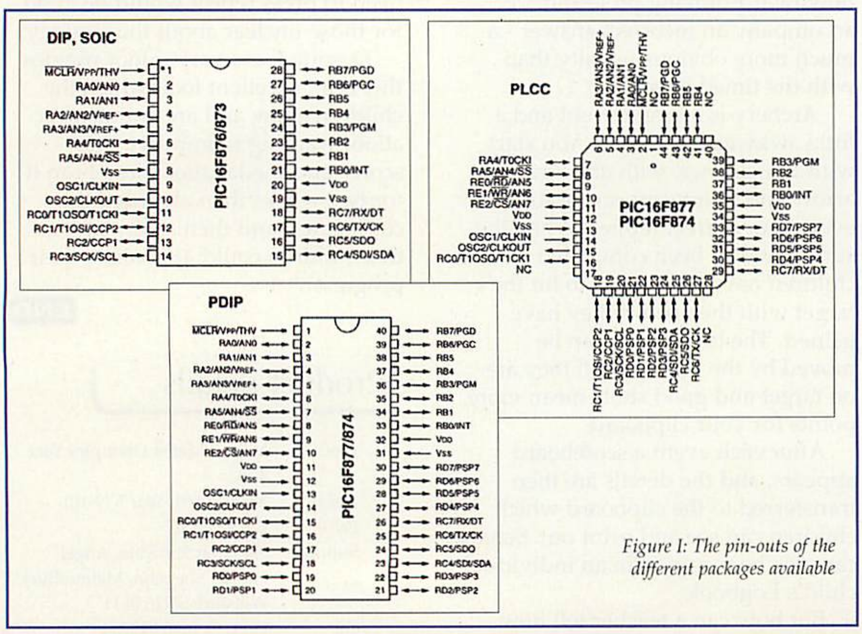


Figure 1: The pin-outs of the different packages available

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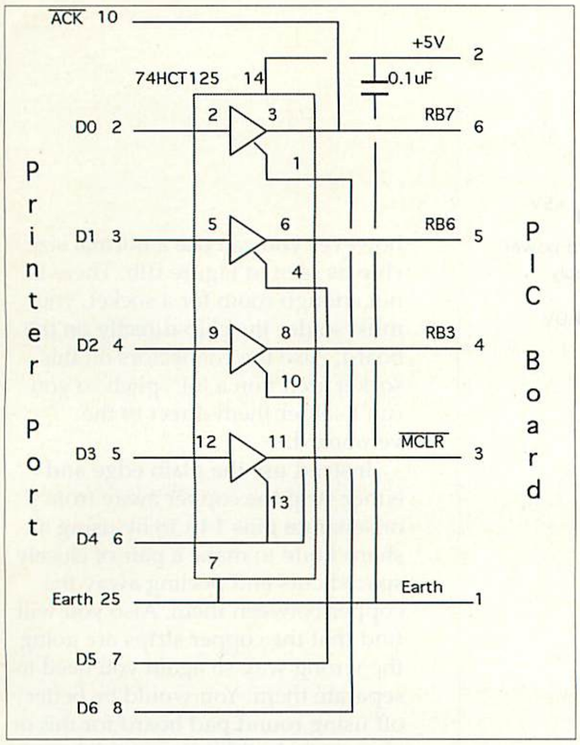


Figure II: The programmer interface

useful. From a hardware point of view the pinout is different on the two package sizes but there is no difference from the software point of view, so going up to the larger device won't have any impact on your code.

An example of the two package sizes and pinouts are shown in Figure I, I favour the PLCC package rather than the standard DLL (dual in line). It is about 50p more expensive but it does save space, more detail of how to use this package later on.

When looking at Figure I note that there are many pins with multiple functions. The ports follow the same naming convention as the PIC16F84 device, ports are labelled A, B, C and so on, with the bit number following. Therefore RC7 is bit 7 on port C, this pin is labelled RB7/RX/DT which means it can be used as an I/O pin, or the input pin for the serial interface or contain synchronous data.

Some of these alternative uses can be confusing at first so I like to stick to the port designations. For complete information on these devices see the data sheet on the next cover CD, get it from via *Acorn User* Web site or direct from the manufacturers Web site at: **www.microchip.com/10/Lit/PICmicro/16F87X/index.htm**, it's a PDF document and is about 3.5Mb in size.

Anyway let's see what we have to do to use this device. Basically there are four signals you need to waggle in order to program it, two set the device into program mode and the other two clock the data in and out. It can work in two program modes, one requires a 12 volt signal on the program input pin (Vpp) but the mode we are going to use here only requires a 5 volt level on this pin and on the low power program pin (PGM). Sadly when using the low voltage program mode we loose the I/O function of this pin, that is RB3, but there are plenty of others around.

RB6 and RB7 are the other pins we need, they are used to clock data into and out of the chip, however these can still be used as I/O when running providing that either they are isolated during programming or that anything connected to these pins does not interfere with the programming process.

For example if these pins are connected to a switch that hold the inputs down at earth, these switches need to be open during programming. In practice it is simple enough to use other pins for I/O and hold these in reserve. Also you do lose the use of these two pins if you want to run the device in debug mode.

Now, in order to control these pins in the required manner we need some signals from the computer that can be set high or low and also tri-stated, that is made to go into a high impedance state. We need this so that the programming signals don't interfere with the normal running of the chip and that we don't have to disconnect the computer every time we want to run a program. Also we need to

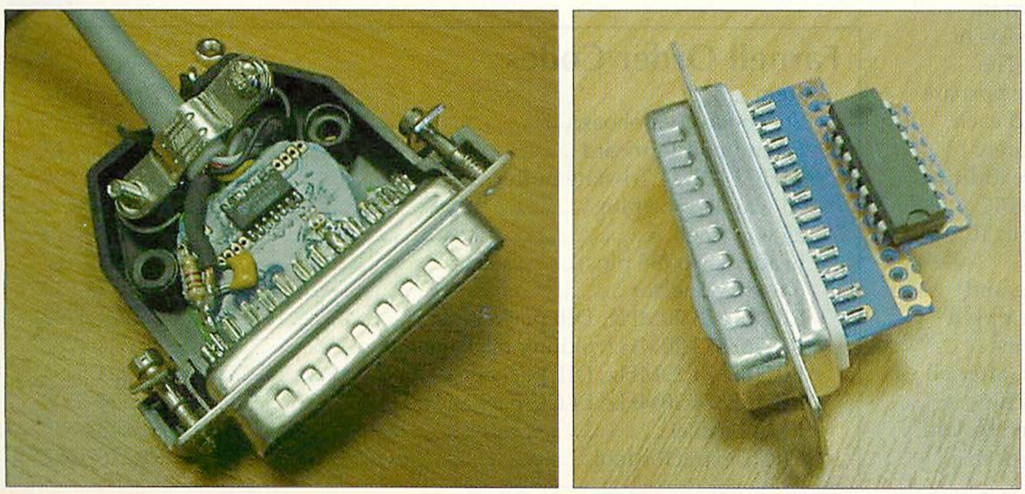


Figure IIIa and IIIb: Wiring up the interface for the programming end

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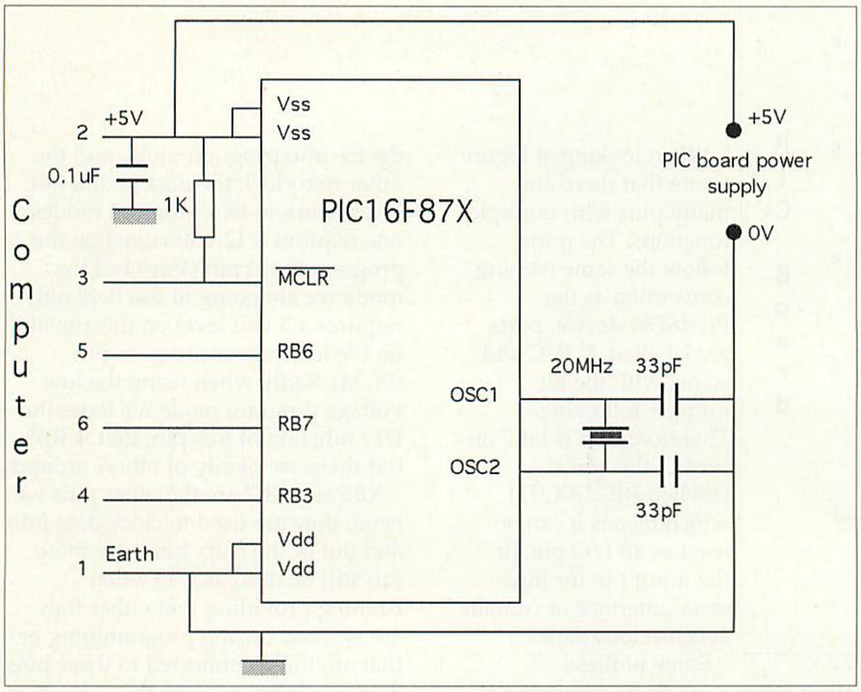


Figure IV: The basic PIC circuit

implement a bi-directional I/O bit – using tri-state buffers is the easiest way of doing this. So, in effect, we have a programmer we can connect directly onto the board we are using. If this is done with a simple plug and socket we can have the situation where we can plug a board in to be reprogrammed and then unplug it when it needs to work in a stand-alone mode.

So let's look at the programming end of our system, it's shown in Figure II. You can see it consists of only one chip, a 74HCT125. The lower four bits of the printer port are used to program the PIC and each signal can be enabled separately by using the upper four bits. In addition the program data pin of the PIC is also sent to the Ack input, pin 10, of the printer port.

This chip needs powering and rather than use a separate supply I have arrange things to take its supply from the board itself, after all you need to power the PIC chip when it is being programmed so you may as well use that to power this interface. Therefore you have six lines that need connecting between your PIC board and the computer. I use a single row socket for this so that it only required a six-way single row pin header on the board, a small overhead for each project.

I built this simple interface on veroboard into the shell of a 25 way DIN socket, and it just fits. I used a surface mount chip as you can see from the photograph Figure IIIa, however you can use a normal size chip as seen in Figure IIIb. There is not enough room for a socket, you must solder the chip directly on the board. Also the connectors on this socket aren't on a 0.1″ pitch so you can't solder them direct to the veroboard.

Instead use the plain edge and either strip the copper away from it or separate pins 1 to 18 by using a sharp knife to make a pair of closely spaced cuts and peeling away the copper between them. Also you will find that the copper strips are going the wrong way so again you need to separate them. You would be better off using round pad board for this or alternately build it on a small board in the middle of the lead.

Now this programmer has to be connected to the PIC device you are making. The basic design is the same each time, all that changes is the components you attach to the peripherals. Figure IV shows the basic PIC design along with the programming plug, note here I am using the crystal oscillator option at 20MHz. So all we need is the software to allow us to program this beast from our computer, and that's a job for next month.

END

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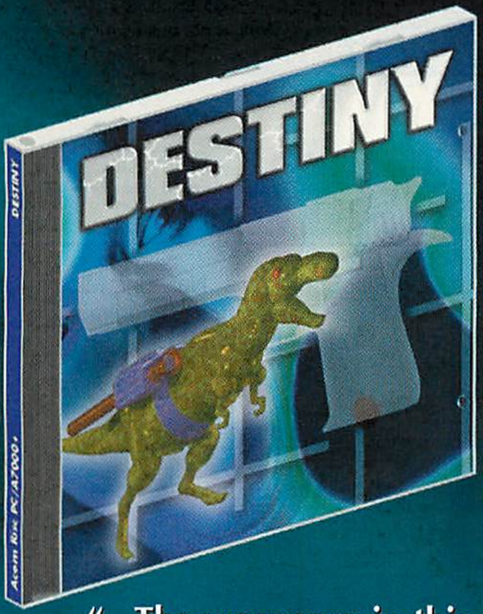
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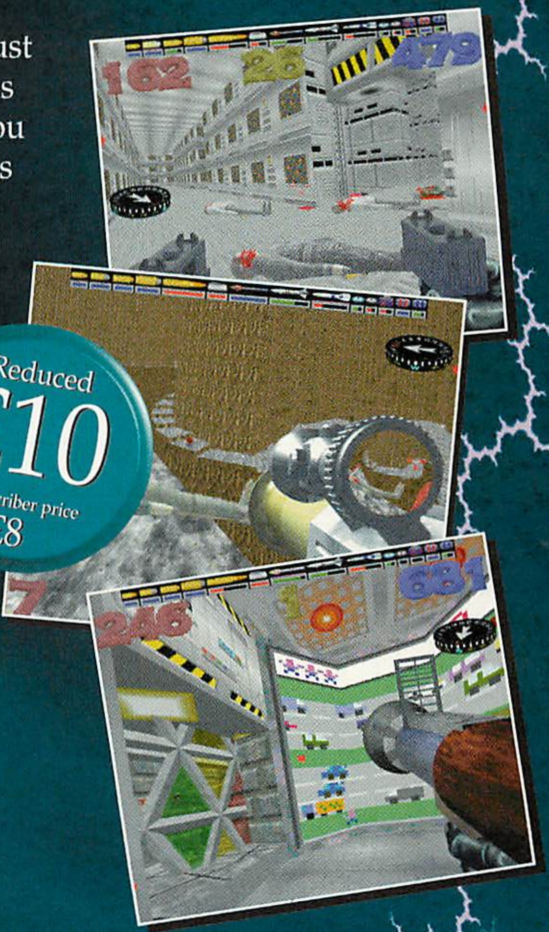
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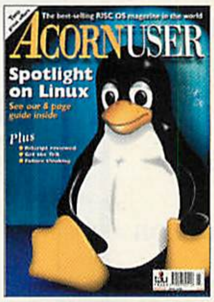
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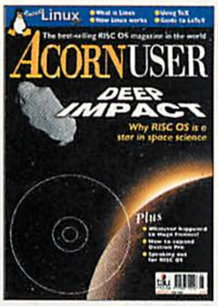


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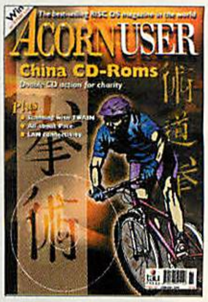
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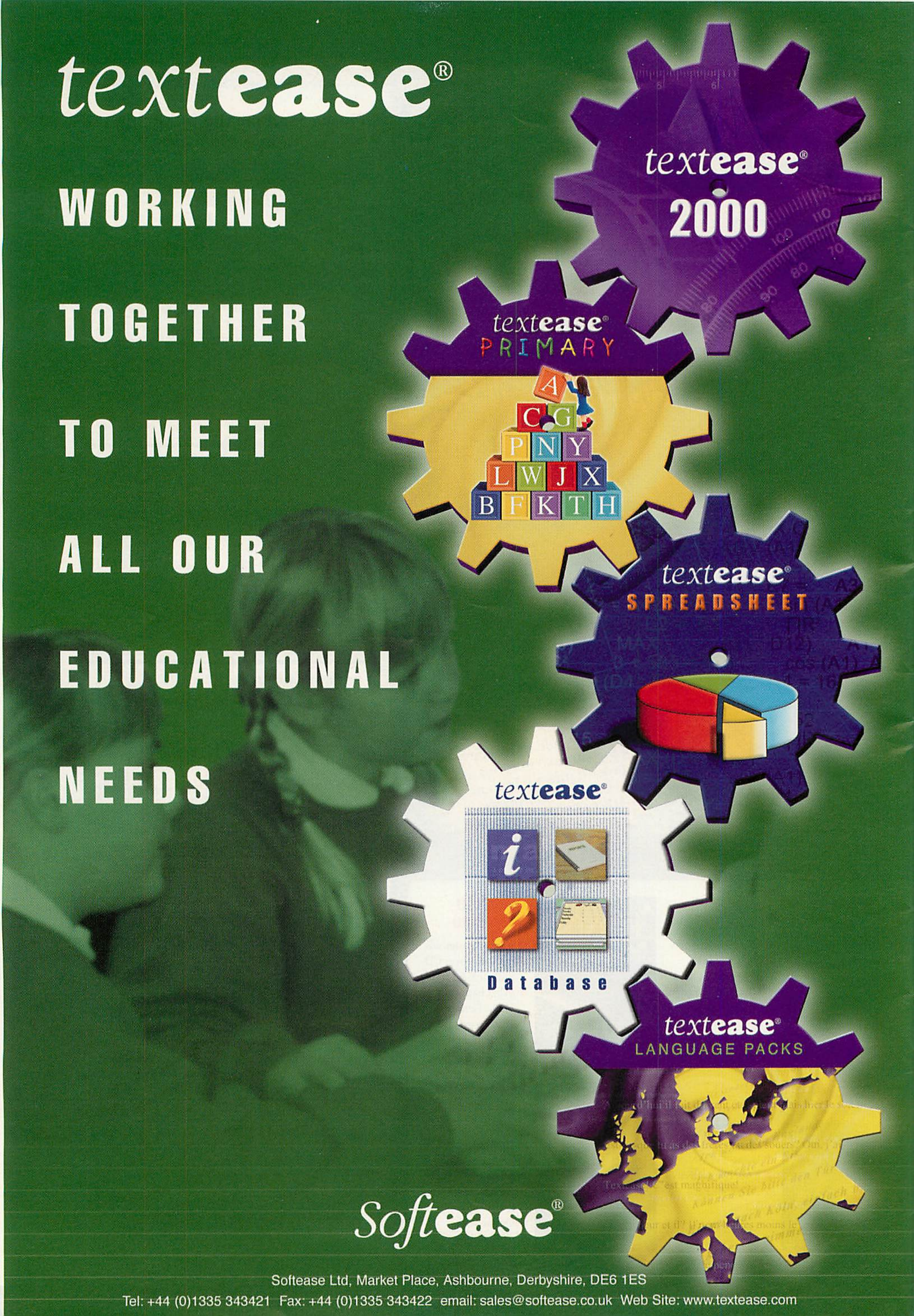
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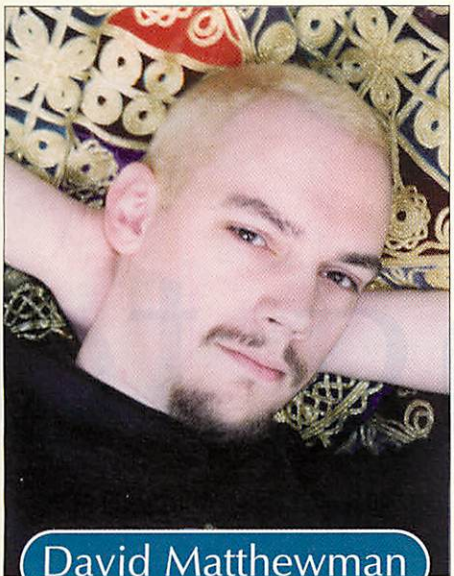
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David Matthewman

The most memorable image I have of David Matthewman is from an old paper cutting. It is of a blond-haired boy of about two years old proudly sitting on his mother's knee in front of a terminal at home, bashing away at the keys and doing what he apparently referred to as 'ogging on'.

'We were sitting at an old Teletype terminal which my mother had at the end of a leased line,' explains David. 'My mother worked from home for the computing centre at Cambridge University; this being 1969 it was one of the first instances of telecommuting, hence the media interest. I didn't actually get an account on the University computer until I reached the ripe old age of 13, and was thus a late developer.'

This caused David to have a bit of a problem when personal computers such as the ZX-81 came along. They looked similar to the terminal, but when people asked him how much memory 'his machine' had he could never answer because he did not know how much memory the mainframe at Cambridge (an IBM 370) actually had, although by ZX-81 standards, it was a lot.

'The first machine I owned was a BBC Master which I got while I was at sixth form. I used this for a range of things from game playing to learning programming, although I only ever got to 'deadly' on *Elite*. I remember writing a sprite-editing program for the game *Labyrinth* – I changed all the sprites to Dr Who characters.'

'I tended to use computers as tools and as accessories rather than ends in themselves,' David explains. 'The thing is, I never did an actual computing course at school and I read engineering at university. So, what I used computers for was coursework, writing and DTP and fun things. I did a bit of programming but I never got a kick out of designing (say) a faster Mandelbrot generator.

'These days I see that side of things a bit more. I do a lot of Web programming, and I do get a kick out of writing a particularly elegant bit of Perl and pulling data out of an SQL database efficiently. Perl is notorious for having more than one way to do a given operation, all of which give you the same end result. It is therefore quite a job finding the way of doing it which runs the fastest, fits best with the rest of the code, is easiest to re-use in a slightly different circumstance or simply looks aesthetically best in listings. I enjoy balancing all these factors together in different situations.

'The enjoyment I get out of writing good Perl code is similar to that I get from editing and writing copy which is really 'tight': clear, concise, good English and fun to read. It is really exciting to be involved in an editorial capacity again with the RISC OS community. The fun part about *RISC World* being on CD-ROM is doing things you could not do with a paper magazine.

You do not have to cut articles to length; you can have as many screenshots as you like, or even none at all; you can include other non-textual materials along with the article, such as demos of the software, sample outputs and long lists of links to other resources; and, of course, it is searchable.'

He's been here before, of course. When he worked on *Acorn User*, he produced the first ever cover CD for an Acorn magazine. It seems as though every second person I interview got into the market while trying (and failing) to finish a PhD, and David is no exception.

'I spotted an advert for deputy editor in *Acorn User*. Mark Moxon had taken over as editor just as the magazine had moved from Redwood in London to Europress in Macclesfield. Now Mark, being the most devoted Londonner ever to come out of the city of Stoke-on-Trent, definitely did *not* want to go and work back up there.

So my job was to be the 'man on the spot', fielding all calls and copy that came into the office while Mark did the journo bit, the planning and the editorial work from London. It was an arrangement that worked really well, and I became editor when Mark left to 'find himself' and generally have fun in Australia.

'The Acorn market is an amazing place. You wander around a show and you've got people running software companies and writing complex software like a TCP/IP stack rubbing shoulders with the users; in fact they *are* users. Because that happens you get software like *Easiwriter.*

Microsoft with all their billions of dollars could never produce something as good as *Easiwriter* because the people who write and develop the software at Microsoft do not spend entire shows or large portions of their waking lives speaking to people who use their software.'

Jill Regan

> I tended to use computers as tools and as accessories rather than ends in themselves

Replying to

I read with great interest Robert Richards' email printed in the July 2000 issue. I won't repeat what has already been said by Robert, but the point about the RISC OS community needing to seize this golden opportunity needs emphasising. There is a major backlash against Microsoft at the moment and this is the perfect chance for RISC OS to enter and grow in the mainstream markets.

I have suggested to Castle (who noted my comments "with interest") that, in the same fashion as All The Phone Companies Together in the recent Big Number campaign, All The RISC OS Companies get together and advertise outside of the RISC OS community. When people open PC Pro, they should be faced with RISC OS adverts; when they open their daily newspaper, they should be faced with a RISC OS advert; TV and billboard advertising should be implemented.

The myth about 'industry standards' needs to be shown up for what it is: a myth. Businesses use whatever system fits their needs, for example; Macs are used in newspapers and for graphics, Unix/Linux in ISPs and telecoms companies and Windows machines in the office for Internet and word-processing. This myth of "you will be using Windows machines when you leave school" is horribly wrong and should be countered.

My old secondary school, where I worked as Computer Technician for two years (with Acorns), is in the process of chucking their Acorns and replacing them with PCs, because a new IT teacher is on the Microsoft bandwagon. All the PCs are networked and it all looks great but all the worksheets and user guides I created are now useless and will take years to replace and crucially, the school can't afford any software so they are unable to take part in events such as Newspaper Day. No-one thought of the software costs. And now they have stability and usability problems.

Castle and co should be making these issues clear to schools and colleges and start clawing back their rightful market. Also, everyone appears to know of the demise of Acorn, but no-one appears to know there are four manufacturers of compatible machines and that RISC OS Ltd is actively developing the OS. This needs correcting.

There is no reason why, with some good advertising, RISC OS machines won't be a huge success. Just look at Apple now.

Michael Stubbs
Leeds

I thought Robert Richard's letter made some very salient points. RISC OS needs and deserves a larger user base, but it will not increase if new machines are marketed only at those people already using it. As Robert points out, new users will not even consider buying a machine if they cannot try it out first, but at the moment there is no way for people to do this.

I remember that Dixons stocked the A3010 when it was released by Acorn and even at the time there were problems; it was claimed that Dixons' staff – who knew very little about the machines – were directing people towards Windows PCs in preference to the Acorns. At any rate, the impression given by looking at a RISC OS machine for five minutes in a shop is that there is little to distinguish it from its Windows neighbours. It's not until you really get to use the machines properly that you discover the difference in ease of use and stability.

So perhaps a better strategy would be for companies such as Riscstation, Microdigital and Castle to operate a scheme whereby new users can try out a machine for a month, say, before deciding whether or not to part with their cash. The trial machines could be packed full of the best products which the

Good service

There have been many letters praising the service provided by dealers within the RISC OS community. I have always been impressed but it is only recently that I have been astounded.

At the Wakefield show I bought a Kinetic upgrade for my Risc PC from Castle, but unfortunately it would not work with my PC card and the standard fixes to resolve StrongARM timing problems were not enough to cure it, John Ballance went out of his way to pursue a solution. This included offering a complete package of components known to work.

Fortunately, Castle reproduced the problem and advised a small modification to the Kinetic card that solved all of the problems.

The Kinetic card now works perfectly, and the additional performance and memory have greatly extended the useful life of an already old machine (by PC standards).

The problems I experienced are rare; most users do not appear to have experienced incompatibility.

Alexander Thoukydides
Bournemouth

Robert

platform has to offer: *TechWriter*, *Ovation*, *Sibelius*, *Photodesk*, *TopModel*, *Textease*, *Oregano* and so on, so that it's obvious there is a wealth of excellent software available, along with tutorials which highlight the excellent features which they provide.

The machine might even include a PC card so that a genuine comparison between the operating systems could be made. Then after a month the machine could either be purchased or returned without obligation.

When I hear that friends are intending to buy a new computer, I might think to mention RISC OS, but I never push the point because I know that the best way to discredit RISC OS is to sound dogmatically biased towards it – and having used Acorn systems for 15 years I suspect there may even be some truth in it. However I wouldn't hesitate for a second in recommending a scheme which allowed them to experience the system properly so that they can make a truly informed decision for themselves.

Personally I like to be optimistic about the future of RISC OS and I hope Robert will find reason to part with his student loan sooner rather than later!

David Llewellyn-Jones
by e-mail

I believe the reply to Robert Richards' question as to whether or not there is a future for RISC OS based computers is in the hands of every one of us.

He is right to say that the market needs to expand, but I disagree that it does not need to be supported. If it is not supported, where is the incentive for developers to expand it? I use a StrongARM Risc PC and was once looking forward to upgrading to a Phoebe. When Acorn cancelled the new computer and announced that they were pulling out of the market, I viewed the future with pessimism, but knew that if the RISC OS market was to survive, I had a part to play.

I compiled a list of software that I wanted and asked my family to buy it for me for Christmas. The idea was that my support might just convince the software developers that there was a future in the market and, if the bottom did fall out of the market, at least I had a good quality computer with years of use left in it, and a bundle of high-quality software to run on it.

I now find that much of the new software I bought has been discarded – because the suppliers have offered me cheap upgrades to even better versions. Would these better versions have been made if people had not supported the market?

I am still not convinced that the future is bright, but I do believe it is better since Acorn's departure. And if the market does disappear completely – well at least I have a good quality computer with years of use left in it and some superb software. Congratulations to the makers of *Drawworks Millennium* and *FontFX*. I could mention many more, but these two just stand out to me as being exceptionally good value and better than anything available for Windoze computers.

Mark
by e-mail

Robert Richards has bought Risc PC and will be bringing us a short series on what it's like for a dedicated Windows user to come to RISC OS for the first time. Should be very enlightening.

Printers & RISC OS 4

I was interested to read two Rambles in the July issue of *Acorn User* relating to printer problems as I have recently upgraded my A7000+ to RISC OS 4. My HP610C printer worked beautifully before the upgrade but performed at a snail's pace after the upgrade. I got no assistance from the company who did the upgrade, but, after contacting RISC OS directly got a solution. It took several e-mails over a period of time as questions were asked, and I carried out experiments, but now I have a perfectly working printer.

A second point, I recently went to RiscStation in Tyledesley with a colleague to collect a new R7500Lite+. The shop front had no badging for Acorn, or for that matter any related badge. We drove straight past it! Robert Richards (see the Letters page) has a point. If one of the prime movers in the Acorn world cannot flaunt the platform in their own shop front what does that say to the world?

I am, and always have been, a convert to Acorn technology but when will some one take the 'risk' of setting up a store in a major high street with the Acorn badge proudly displayed for all to see? We have a long way to go to the days when the Acorn name was widely know through schools and *Acorn User* was two to three times the thickness of today's publication. Publicity outside the 'Inner Sanctum' is the only way to achieve this.

Ian Fantom
by e-mail

Contacting AU

Letters:
letters@acornuser.com

Still supporting Acorn users

Anglia Multimedia has been a leading resources developer in the education market for over 15 years. It started with the very successful KEY DATA, which provided schools with an effective teaching and classroom database for use on Acorn machines. As the company moved to developing CD-ROM curriculum resources, Acorn versions of titles were the norm not the exception, especially as the PC had yet to debut in the schools market.

As a result Anglia Multimedia has developed successful trading relationships with thousands of schools. Among its customers are many Acorn users and those who have been flag-wavers for the use of IT in education for many years. To these teachers, the recent government ICT initiatives and ICT training programmes are the cause of wry smiles rather than anxious moments.

Peter Stibbons – Managing Director at Anglia Multimedia, who has been with the company from the very beginning – comments on the developments and changes in the last few years, "We're maintaining Acorn products wherever appropriate and where production can be cost effective. We've recently trained and equipped a company in India who produce some of our discs together with an Acorn machine – while the authoring system has been transferred to PC, the runtime software operates on Acorn, Mac and PC.

"We've also just re-established a BBC Master 128 in our presentation room to remind ourselves of all those excellent programs from the 1980s which can be updated for Web delivery on Anglia Campus!"

Anglia Multimedia supports both the Primary and Secondary curriculum with its products and there are Acorn, and PC / Apple versions of many titles.

New initiatives like the Literacy and Numeracy strategies have provided the opportunity to develop computer-based activities supporting the Framework documents. New CD-ROMs, one for each year group providing a range of carefully focussed activities, have been emerging since last September. Both the Primary Literacy and Primary Numeracy series will be completed by September this year.

With new NGfL computers heading for the Primary classrooms, more Acorn machines have appeared in Infant classrooms. Anglia has made sure that all titles for years 1-3 have an Acorn version.

The Anglia Multimedia backlist contains such evergreens as *Garden Wildlife* and *Seashore Life* –"Still best sellers" comments Peter Stibbons. The Primary History series includes *Romans*, *Vikings*, *Ancient Egyptians* and *Ancient Greeks*. *Eureka* and *Being a Scientist* provide resources for the Primary Science and Technology curriculum.

For Secondary Schools – *British Isles from the Air* and *British Coastlines from the Air* plus the ever popular *World Population* and *Japan Atlas Files* provide Geographers with plenty of excellent material. The new *Electronic Atlas for Schools* is a PC-only product, but with the maps are built from the *Draw* vector system, so Acorn users have a head start in developing their own materials for use in the Electronic Atlas. Details can be found at **www.anglia.co.uk/electronicatlas** in the FAQ and discussion board section.

A development with the John Innes Food Research Centre was the platform for *Cell City* a CD which views the world of cells through an electron microscope with the analogy to the organisation of a city.

Understanding the Body and *Understanding Energy* are two ever-popular backlist titles which also demonstrate that accessing content and information quickly is an important feature of good CD-ROM resources.

Electric Studio provides a browser-based Acorn CD and John Hedgecoe's *Photography* contains a database of 1000 photographs from his collection.

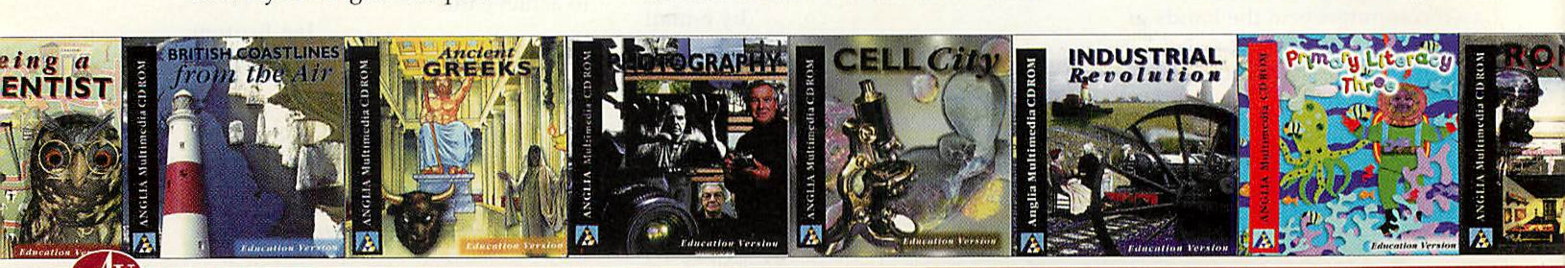
Anglia Multimedia provides 10-user network licences in the purchase price of their CD-ROMs which sell at around £50 plus VAT. Licences to add 10 extra users to your network cost only £25 plus VAT.

Stand-alone computer users can buy extra discs for other machines for a very reasonable £10 plus VAT. They also provide a useful teacher's book with all the installation and operating instructions including photocopiable worksheets for pupils. Earlier discs have these resources as a file on the CD.

So the message to all teachers and schools still using Acorn machines in their classrooms is "ASK Anglia Multimedia".

Their sales office can be contacted by phone or fax on 01268 755811 or by email: scauk@aol.com Anglia Multimedia has a very efficient web site, which includes an online shop.

Check it out at: **www.anglia.co.uk**

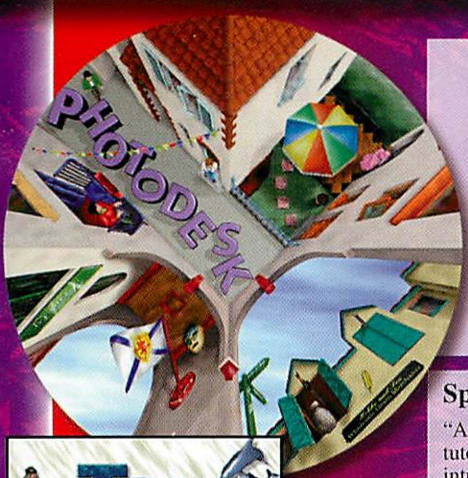


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news

New Olympus C3030 ZOOM

Super Olympus camera with 3Mpix CCD integrated optical and digital zoom, Quicktime movie and sound feature, 2048x1536 resolution with 15 options!



PHOTODESK 3 is the package which defines studio quality image editing and artwork on RISC OS machines. It is easy to use but has many powerful features, including LAYERS and a sophisticated colour management system (CMS) for the full-time graphics professional. **£299.50**

PHOTODESK2 is still available, retaining the CMS but not layers. **£199.00**

PHOTODESK LIGHT, an economic alternative to PHOTODESK3 retains most of its creative features apart from the Colour Management System, Layers and some features essential to the professional user. £134.75 Plug-in Effects Packs are available for all Photodesk packages. Each pack contains 10 special effects. **£19.95**

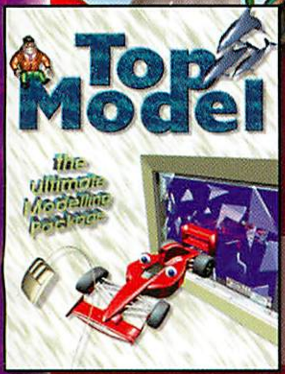
Spacetech tutorial CD ROMs:

"An Introduction to Digital Art" featuring bitmap and vector graphics tutorials by the well-known artist, David Cowell. This is a fascinating introduction to studio quality graphics work on CD ROM for **£24.95**

A NEW CD from David is now available: "Creative Digital Imaging" This contains a resource of images and covers the following topics in greater detail: Digital painting, Painting with Texture, Digital Photography, Photo illustration, Montage, Portraits, Words and Text, Creative masking, Hints and Tips. **£24.95**

Digisnaps: A library of over 100 high quality digital photographs from David Cowell. **£12.95**





TopModel2 V.2.14 is now available for **£152.75.** Existing users may upgrade for **£29.95** or buy the NEW CD-ROM packed with resources, the new plug-in Top3DFonts! and a free 2.14 upgrade for only **£58.63.** TopModel 2 is the definitive 3D modelling package for RISC OS.



A presentation package on CD-ROM from Spacetech

Makes your slide shows quick and easy to create!

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OHP2 now available on CD-ROM. Many new features including Sound and Export.



PhotoLink is an Acorn multi-driver for the most popular makes of digital camera. It is bundled FREE* with the following cameras:

C860L 1280x960 resolution, TFT screen, macro, 2x digital Tele Mode *Our price* **£299.99**
C960ZOOM 1280x960, 3xoptical zoom. replacement for C920Z *Our price* **£399.99**
C2020 ZOOM 1600x1200 optical zoom, has everything including manual override for auto settings, remote control. Records bursts of quicktime! *Our price* **£549.99**
C3030 ZOOM 2048x1536 optical zoom. TRUE 3 Megapixel resolution (not interpolated) has everything including sound and quicktime movie. *Our price* **£799.99**

*PhotoLink is available free with cameras purchased from Spacetech, or on its own, if you have purchased your camera elsewhere, at **£69.00**



PhotoReal is the Acorn driver extension for the Canon BJC4300, BJC4650, BJC7000, BJC 7100 BJC2000, Epson Photo, Photo700, Photo750and Photo1200 printers with photo-realistic capability. PhotoReal makes use of the same advanced techniques for producing high-quality four-colour separations as Photodesk and comes ready calibrated for the special dye-based inks used for photo-realistic printing. A calibration application is also supplied to allow you to tailor the results to your own specification.

Driver only **£69.00** inc.VAT. or FREE if purchased with printer!

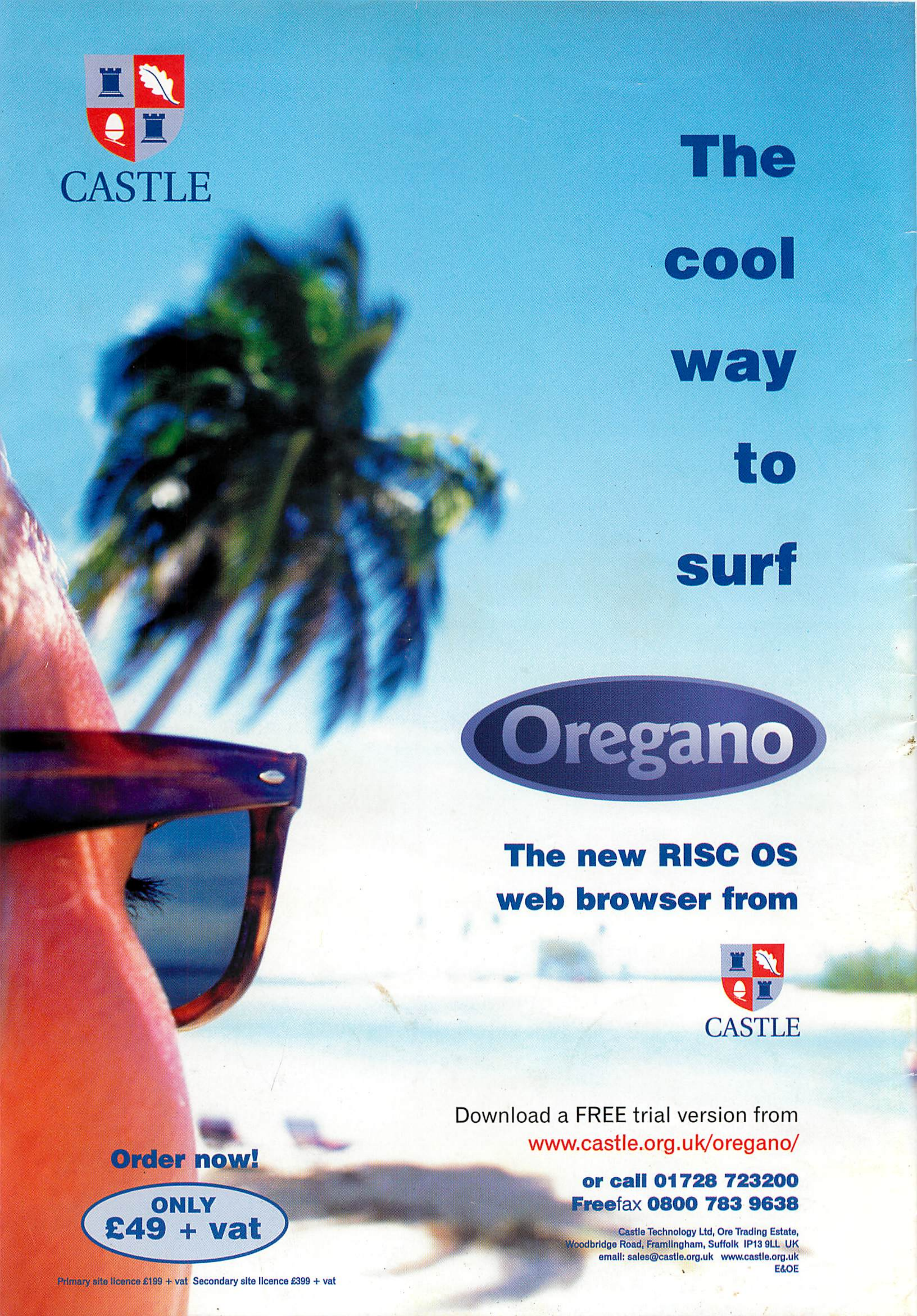
Examples: Canon BJC2000 **£149.95**, Epson Photo750 **£209.95**, Epson Photo1200 A3 **£399.99**, BJC7100 **£299.00**

(all prices include PhotoReal Driver) Ask us to mail you a sample printout!

spacetech imaging technology

All prices include VAT

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